

Alternative Futures and Army Force Planning

Implications for the
Future Force Era

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Preface

This monograph presents the results of a RAND Arroyo Center research effort dedicated to creating six alternative future worlds for the 2025 timeframe and drawing out the implications of those worlds for Army force size, structure, and design. The research was part of the RAND Arroyo Center "Capstone Future Forces" project that was conducted for the Deputy Chief of Staff for Operations and Plans (DCSOPS).

The analysis contained in this report should be of interest to those in the Army who are concerned with either intelligence forecasting or long-range force planning. Our alternative futures methodology is offered as a supplement to the "single point solution" approach to assessing the distant future that is often used within the national security community. It is hoped that our alternative futures tool can help the Army to devise effective hedging strategies that will at least partially insulate the service against the vagaries of the often rapidly changing international security environment.

All of the research for this monograph was conducted within RAND Arroyo Center's Strategy, Doctrine, and Resources Program. RAND Arroyo Center, part of the RAND Corporation, is a federally funded research and development center sponsored by the United States Army.

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Contents

Preface.....	iii
Figures	ix
Summary.....	xi
Acknowledgments.....	xix
Abbreviations	xxi

CHAPTER ONE

Introduction	1
--------------------	---

CHAPTER TWO

Project Methodology	5
Building Alternative Futures	5
Moving from Alternative Futures to Armies.....	10

CHAPTER THREE

Future Trends and the Creation of Alternative Futures	15
Geopolitics	15
Good Trends.....	16
Medium Trends.....	18
Bad Trends.....	20
Demographics.....	21
Good Trends.....	23
Medium Trends.....	24
Bad Trends.....	25
Economics	26

Good Trends	26
Medium Trends	27
Bad Trends	28
Technology	30
Good Trends	30
Medium Trends	31
Bad Trends	32
Environment	32
Good Trends	32
Medium Trends	34
Bad Trends	34
Next Step	35

CHAPTER FOUR

Describing the Alternative Futures	37
U.S. Unipolarity	37
Signposts	42
Scenario	43
Democratic Peace	45
Signposts	48
Scenario	48
Major Competitor Rising	51
Signposts	55
Scenario	56
Competitive Multipolarity	58
Signposts	61
Scenario	62
Transnational Web	64
Signposts	66
Scenario	67
Chaos/Anarchy	69
Signposts	71
Scenario	72

CHAPTER FIVE

Implications for Army Force Planning	75
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U.S. Unipolarity and the "Light Lethal Army"	77
Moving from Capabilities to Characteristics	80
Democratic Peace and the "Policing Army"	82
Moving from Capabilities to Characteristics	85
Major Competitor Rising and the "Big War Army"	86
Moving from Capabilities to Characteristics	89
Competitive Multipolarity and the "Global Maneuver Army"	91
Moving from Capabilities to Characteristics	95
Transnational Web and the "Netwar Army"	97
Moving from Capabilities to Characteristics	100
Chaos/Anarchy and the "Dirty Environment Army"	101
Moving from Capabilities to Characteristics	104

CHAPTER SIX

Some Final Thoughts	105
References	109

Figures

- 1. Project Methodology.....6
- 2. The Full Matrix of Outcomes7
- 3. A Continuum of the Six Futures.....9

Summary

Overview

Predicting the future is almost always fraught with uncertainty. However, Army force developers working to plan a force capable of meeting the challenges of the 2025 timeframe (the Future Force era) face more uncertainty than most. Today's world, especially in the wake of the September 11, 2001 terrorist attacks and the Iraq war, exhibits a level of dynamism and change not seen during the comparatively static decades of the Cold War—times when the drivers of U.S. security policy were relatively fixed and their demands upon the Army easily identified.

This study has attempted to help the Army deal with the task of long-term force planning by using the tool of alternative futures analysis. Rather than positing a single point estimate of the 2025 future and trying to defend it, we chose to help the Army bound the future by laying out a representative spectrum of different “future worlds” in the hope that they would illustrate the complete universe of future missions.

Project Methodology

The study's methodology begins with the identification of five development variables: geopolitics, economics, demographics, technology, and the environment. These variables were drawn from drafts of The Army Plan (TAP) that were circulated in late 1997. Conversion of

the development variables into alternative futures was accomplished by varying the slopes of the trend lines of the five according to their impact upon U.S. national interest. Good, medium, and bad slopes were determined for each variable.

A good slope was defined as one that was beneficial to U.S. national interests. A medium slope was defined as one that was largely neutral, while a bad slope was one that was damaging to the United States and its interests. We then labeled the features of each trend line with respect to the given development variable and produced a 5×3 matrix. The five development variables were arrayed vertically and the three types of slopes arrayed horizontally. The cells of the matrix were then filled with the labels for each individual trend line.

Through a process of mixing and matching cells, we produced a set of six alternative futures: "U.S. Unipolarity" and "Democratic Peace" (best cases), "Major Competitor" and "Competitive Multipolarity" (medium-good cases), "Transnational Web" (a medium-bad case), and "Chaos/Anarchy" (worst case).

After the main features of each world were fleshed out, concrete army types for each 2025 world were created. This entailed four steps. Scenario selection was the first of these steps. Each scenario was made as demanding as possible in the world at hand because it was necessary to ensure that the army types we created would be capable of handling all possible eventualities in each world. Secondly, there was a need to set out the capabilities that the Army forces involved would have to possess to carry out their mission in each scenario. This was done by using the strategies-to-tasks methodology. Third, force size and characteristics for each world were determined. Characteristics were formulated as technical system types that meet the needs presented in our capability statements. For each scenario, all the needed characteristics were combined into a bundle that provides the outline of an army type. Fourth and finally, common characteristics seen across all or most of the six army types were identified.

Describing the Alternative Futures

U.S. Unipolarity is a best-case future in which the United States remains the world's dominant power across the board, i.e., militarily, economically, politically, and culturally. The other great powers (China, Russia, the European Union, and India) are both unable and unwilling to challenge the U.S.-led international order. In this world, the security threats to the United States come from rogue regional powers like Iran and Indonesia as well as from scattered ethnic conflicts and humanitarian disasters in the poorest parts of the developing world.

Democratic Peace is clearly an idealistic vision of the future. Democratic Peace holds that liberal democracy and free, open markets have spread to such an extent that they are becoming institutionalized in all of the world's great powers (Europe, India, China, Japan, Russia, Brazil) as well as most middle-ranking powers. Thus, in 2025, liberal democracy is excluded only from some scattered pockets of territory made up of the poorest developing nations. Large interstate wars are not a realistic possibility in this kind of international system. Spreading democracy has virtually eliminated the phenomenon of "rogue regional states" in this vision of the 2025 future, so proliferation of weapons of mass destruction (WMD) is not a major security issue for U.S. leaders in Democratic Peace. In specific terms, the key zones of instability in the Democratic Peace world envisioned here for 2025 are northern Latin America, Sub-Saharan Africa, and parts of South Asia.

Major Competitor Rising is the first of the two medium-good worlds posited in this study. It portrays the emergence of a near-peer competitor to the United States: a competitor with significant conventional and strategic nuclear capabilities that include a power projection force and dedicated military space assets. Specifically, the Major Competitor Rising world holds that a Sino-Russian Entente forms in 2015–2018 with the goal of weakening America's global position as well as that of its key allies.

Competitive Multipolarity is our second medium-good world. In this future, we would see the emergence of two large powers that

are capable of challenging the United States on roughly equal terms. Each of these three powers would attempt to build its own coalition of friends and allies at the expense of the other two. Here, instead of witnessing large-scale warfare in a couple of key theaters, we would see an ongoing competition between fluid defensive alliance systems, with a mix of carrots and sticks being offered to critical small powers in attempts to persuade them to either shift or maintain their present political alignment. In Competitive Multipolarity, the United States, Russia, and China each lead a major alliance system.

Transnational Web is the medium-bad world in our study and represents a more unorthodox view of the 2025 future. It posits a situation in which the nation-state has lost a substantial amount of power to transnational actors, many of whom use the burgeoning Internet to coordinate their actions worldwide much more rapidly than can any national government bureaucracy. It is assumed here that a substantial amount of nation-state power has been usurped upward by transnational, globally distributed actors such as multinational corporations, transnational criminal organizations (TCOs), and terrorist networks. In this hypothetical future, the period from 2020 to 2025 witnesses a dramatic growth in the threat to the United States posed by radical transnational "peace and social justice" groups. Almost all of these groups come to identify the United States as an arch-villain that stands in the way of their drive to reshape the global order.

The sixth and final world produced by this study was the worst-case future—Chaos/Anarchy. Here, the nation-state has lost considerable power to subnational actors. The premise of Chaos/Anarchy is that factors such as overpopulation, environmental degradation, and ethnic strife cause the collapse of the nation-state in large swaths of the developing world. The resulting vacuum is filled by warlords who, lacking a tax base, turn to terrorism and the smuggling of contraband, narcotics, and weapons of mass destruction to support their "regimes." This is a world of massive instability that frequently witnesses mass migrations and virulent epidemics. The national security threats posed to the United States here would often be very shadowy and difficult to grapple with.

The Six Army Types

For each of the six worlds, a distinct Army type was created. It should be noted that some common desired characteristics were observed across all six Army types. These were: secure, reliable wireless communications, robust and flexible logistics networks, and some form of theater missile/air defense.

The U.S. Unipolarity world yielded a 2025 force that is called the "Light Lethal Army." The Light Lethal Army must have weight and volume constraints sufficient to allow for all of its equipment and initial sustainment to be moved over intercontinental distances in C-17s and C-5s. This force would strike a good balance between mobility and firepower. Its combat vehicles would have an all-terrain capability and would use speed rather than armor as a means of protection.

"Democratic Peace" yielded an army we call the "Policing Army." The Policing Army is designed mainly for participation in multinational peacekeeping and cease-fire enforcement operations within the overall context of a benign international system. This force would be made up predominantly of high-quality light infantry, small packets of 2000-vintage armor and armored infantry, significant numbers of Special Forces detachments, and a robust force of reliable transport helicopters.

A force called the "Big War Army" is this study's response to the Major Competitor world. The Big War Army would emphasize survivability over mobility in its maneuver forces, so its armored vehicles would be heavier and slower than those seen in the Light Lethal Army. The Big War Army would possess a large number of sophisticated ground-based deep fires systems for the purpose of attriting enemy armor en masse, aiding the Air Force in the suppression of enemy air defense (SEAD) mission, and targeting adversary supply routes and supply/logistics depots.

The "Global Maneuver Army" was constructed to meet the demands of the Competitive Multipolarity future. This force is broadly similar to the Light Lethal Army that was created to deal with our first alternative future. The Global Maneuver Army will have signifi-

cant self-deployable elements so that it can move into disputed regions very quickly to achieve early forward presence. The characteristics of the Global Maneuver Army that distinguish it from the Light Lethal Army are its extensive and well-developed command and control (C2) and logistics networks.

Transnational Web's challenges stimulated the creation of the "Netwar Army." The Netwar Army is designed to deal with networked, geographically dispersed, hostile transnational actors. It has three components: (1) an information warfare/cyberintelligence group; (2) a cyber public affairs corps; and (3) a collection of special operations forces—like teams designed for rapid movement overseas and multiple, simultaneous strikes against terrorist cells located in foreign countries. It is assumed that, in most cases, these SOF-type units will work in tandem with foreign law enforcement agencies.

The study's sixth and final army is called the "Dirty Environment Army." The Dirty Environment Army is a response to the mass disorder found in our worst-case world, Chaos/Anarchy. Essentially, the Dirty Environment Army is a larger, more capable version of the Policing Army that was discussed earlier. The Dirty Environment Army has a very robust force-protection capability, including comprehensive defensive systems to protect personnel and equipment against nuclear, chemical, and biological attack. In case these defenses should fail, the Dirty Environment Army has a larger-than-usual complement of medical personnel. This force's combat capability is oriented toward light infantry with light armor and heliborne support.

Some Final Thoughts

Although much of the research for this study was done during the Army After Next (AAN) period that preceded the current Transformation initiative, the methodology presented herein for assessing the future is still relevant to the Army because it is tied to general force capabilities and characteristics and not to specific programs or platforms. This research offers five areas of potential benefit to the Army:

exposure to a spectrum of futures, a set of signposts for monitoring the international security environment, some insights on the changes in force structure size and intertheater mobility requirements across the six worlds, a discussion of opportunities for hedging actions in force planning, and, finally, a set of capabilities taken from across the futures that can form the basis for a Full Spectrum Future Force should the Army proceed with early deployment of the proposed future combat system (FCS) family of platforms and technologies.

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The author would like to thank a number of individuals who contributed to this monograph. Special appreciation goes to RAND colleague Richard Darilek, who was the project leader of the "Capstone Future Forces" study under which this research was conducted. Richard's unfailing patience and constant encouragement were the key elements that moved this monograph forward to completion. Colonel Frank Willingham, the Director of the G8 Force Development Division of the Army Staff, was the project sponsor and was exceptionally diligent in reviewing the later drafts of this publication. David Kassing and Lauri Zeman of RAND both served as directors of RAND Arroyo Center's Strategy, Doctrine, and Resources Program during the course of this research effort. Their long-term support for this work was absolutely essential. RAND colleague David Shlapak and LTC Robert Steinrauf of the Center for Army Analysis wrote insightful peer reviews of an advanced draft of this report. Their comments improved the final product greatly. RAND colleagues Bruce Orvis, John Dumond, and Rick Eden provided excellent comments on very early versions of the project briefing. Barbara Kenny and Patrice Lester did superb work in converting this document into proper RAND format, and Nikki Shacklett edited it with her customary skill and thoroughness.

Abbreviations

AAN	Army After Next
AIDS	Acquired Immune Deficiency Syndrome
APC	Armored Personnel Carrier
APOD	Aerial Point of Debarkation
ASAT	Anti-Satellite
ASEAN	Association of Southeast Asian Nations
ATBM	Anti-Theater Ballistic Missile
AUC	Autodefensas Unidas de Colombia
BDA	Battle Damage Assessment
C2	Command and Control
C4ISR	Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance
CASTAB	Cairo Stabilization
CDP	Congo Democratic Party
CEP	Circular Error Probable
CIA	Central Intelligence Agency
COIN	Counterinsurgency Operations
COLS	Colombia Stabilization Force

CONUS	Continental United States
DCSOPS	Deputy Chief of Staff for Operations and Plans
DNA	Deoxyribonucleic Acid
DoD	Department of Defense
EFA	European Fighter Aircraft
EU	European Union
FARC	Colombian Revolutionary Armed Forces
FBI	Federal Bureau of Investigation
FCS	Future Combat System
FLIR	Forward Looking Infrared Radar
GNP	Gross National Product
GPS	Global Positioning System
HUMINT	Human Intelligence
IBM	International Business Machines
ICBM	Intercontinental Ballistic Missile
ICC	International Criminal Court
IMF	International Monetary Fund
IOC	Initial Operating Capability
ISR	Intelligence, Surveillance, and Reconnaissance
JSF	Joint Strike Fighter
MEADS	Medium Altitude Air Defense System
MOUT	Military Operations on Urban Terrain
NATO	North Atlantic Treaty Organization
NBC	Nuclear, Biological, Chemical
NGO	Nongovernmental Organization
NPT	Nonproliferation Treaty

NSC	National Security Council
OAS	Organization of American States
PGM	Precision-Guided Munition
PLAAF	The Chinese Air Force
POL	Petroleum, Oil, Lubricant
PRC	People's Republic of China
RC	Reserve Component
RMA	Revolution in Military Affairs
SAM	Surface-to-Air Missile
SASO	Stability and Support Operations
SBCT	Stryker Brigade Combat Team
SEAD	Suppression of Enemy Air Defense
SIGINT	Signal Intelligence
SOF	Special Operations Forces
SOUTHCOM	Southern Command
SPOD	Seaport of Debarkation
TAP	The Army Plan
TBM	Theater Ballistic Missile
TCO	Transnational Criminal Organizations
TDA	Table of Distribution and Allowances
TEL	Transporter-Erector-Launcher
THAAD	Theater High-Altitude Area Defense
TMD	Theater Missile Defense
TV	Television
UAE	United Arab Emirates
UAV	Unmanned Aerial Vehicle

UFLC	United Front for the Liberation of Congo
UN	United Nations
USAF	United States Air Force
USN	United States Navy
WEL	World Environmental League
WMD	Weapons of Mass Destruction
WTO	World Trade Organization

Introduction

Predicting the future is almost always fraught with uncertainty. However, Army force developers working to plan a force capable of meeting the challenges of the 2025 timeframe (the Future Force era) face more uncertainty than most. Today's post-9/11 and post-Operation Iraqi Freedom world exhibits a level of dynamism and change not seen during the comparatively static decades of the Cold War—times when the drivers of U.S. security policy were relatively fixed and their demands upon the Army easily identified.

Despite the emergence of Al Qaeda as a potent worldwide force, both the scope and the duration of the war on terrorism remain uncertain, as does the level of priority that will be accorded to “more traditional missions” such as Foreign Internal Defense and Peace Operations.

Even after taking into account the tragic events of 9/11, much of the dynamism and change occurring at the start of the 21st century is favorable for the United States and its security interests. The spread of information technologies and their positive impact on U.S. competitiveness and conventional military power, increases in the number of nations enjoying democratic governance, and continuing socioeconomic weaknesses in several potential geopolitical competitors (like the People's Republic of China [PRC]) all bode well for the future. However, some of today's underlying global developments are indeed troubling. These include: the increasing proliferation of weapons of mass destruction (WMD), the continued existence of militant Islamic fundamentalism in the Middle East/South Asia/Southeast Asia, and

the possibility of increased political instability in East Asia as a result of the growth of Chinese military power and Japan's continuing economic stagnation. Army planners will have to struggle to understand the security implications of all of this and devise a 2025 force structure that will allow the United States to protect its interests and maintain, perhaps even expand, its influence in the face of a diverse set of threats.

This study has attempted to help the Army deal with this task by using the tool of alternative futures analysis.¹ Rather than positing a single point estimate of the future and trying to defend it, we chose to help the Army bound the future by laying out a representative spectrum of different "future worlds" in the hope that they would illustrate the complete universe of future missions. It should be noted that each of our future worlds assumes that the United States will remain an internationally engaged actor with global interests. We did not consider a paradigm of U.S. isolationism. Our set of alternative futures has utility to the Army in three ways: as a force development survey, as a near-term planning tool (0–10 years), and as a far-term planning tool (10–25 years).

Since each of our futures was used to produce a "bundle of force characteristics" that, in essence, constituted a possible Army type for the future, the project should serve to provide the Army leadership with a menu of the different force types it may wish to develop under the auspices of the Future Force initiative. This kind of survey may stimulate constructive discussions within the Army about appropriate paths for force development.

In terms of near-term planning purposes, the identification of common desired force characteristics across the different futures could enable the Army to see which types of technologies will be useful to it in 2025 regardless of the course of external events. This would allow the Army to hedge somewhat against future uncertainty

¹ For a review of the theoretical underpinnings of the paradigm of alternative futures analysis, see Kees van der Heijden, *Scenarios: The Art of Strategic Conversation*, New York: John Wiley & Sons, 1997, esp. pp. 53–130.

by giving early priority to those investments that are guaranteed to have relevance across the whole spectrum of potential 2025 worlds.

Finally, the far-term utility of our approach lies in its usefulness as a roadmap for tracking global trends that shape the international security environment. We believe that the outlines of the 2025 world will not become clear until the 2010–2015 timeframe. The six different alternative futures presented here can help the Army synchronize major acquisition decisions with the evolution of the international environment. Our approach does this through the use of signposts.² Each of our alternative futures is accompanied by a list of signposts that tell the observer if that particular future is becoming more or less likely as time passes. As we move toward 2010, Army force developers and planners will be able to employ our signposts to eliminate some futures as being implausible and to confirm the increasing likelihood of others. It is hoped that, by 2010, the Army would be able to eliminate all but two (or perhaps three) of our futures as being implausible based on a reading of our signposts. Therefore, at the beginning of the 15-year acquisition cycle for the 2025 era, the alternative futures method will clarify the Army's roadmap of the future considerably, allowing acquisition/recapitalization decisions to be carefully aligned with the direction of the international environment.

It should be noted that, as of now, the Army has established the ambitious goal of beginning to deploy the Future Force (including some future combat system [FCS] elements) by 2010, and this would, on the surface at least, appear to conflict with the timeframe established by the use of signposts in this report. There are three points to be made in response to this. First, it is not clear that the Army will be able to meet the 2010 deadline. Concepts for the FCS, the centerpiece of the proposed Future Force, are still in an early stage

² Further discussion of signposts and their uses can be found in James A. Dewar et al., *Assumption-Based Planning: A Planning Tool for Very Uncertain Times*, Santa Monica, CA: RAND Corporation, MR-114-A, 1993.

of development and have not yet been fully defined.³ Second, this report continues to offer the signposts analysis as a way of cautioning the Army that it cannot yet foresee the threats and challenges of 2025 and thus ought to leave some room for flexibility in its Future Force deployment timeline. Third and finally, in order to ensure that this report has some immediate relevance to the Army, the final chapter culls out the most important characteristics from across the futures that ought to be included in a near-term "Full Spectrum" Future Force, if indeed the Army makes the 2010 deadline.

The remainder of this report is divided into five chapters. Chapter Two describes the overall project methodology. Chapter Three outlines the major global trends that we use to build our six alternative futures. Chapter Four describes the features of each of the alternative futures. Chapter Five links the futures to concrete force planning issues. Chapter Six is devoted to some concluding thoughts.

³ For a good rendition of the argument that ground combat vehicle technology is not moving forward as rapidly as some believe, see Michael O'Hanlon, *Technological Change and the Future of Warfare*, Washington, D.C.: Brookings Institution Press, 2000, esp. Ch. 4.

Project Methodology

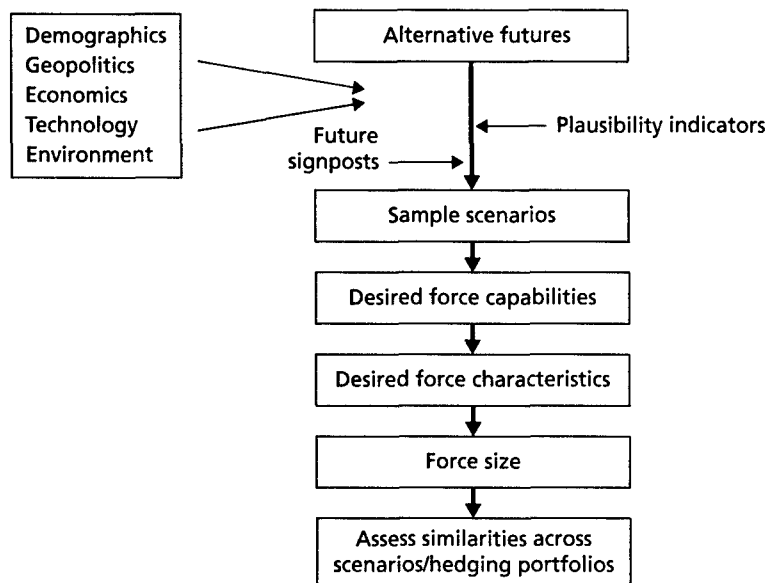
Creating alternative futures and future operating environments has become almost a cottage industry in the U.S. national security community, so it is worthwhile at the outset of this report to explain two key linkages in our work: (1) the method used to build our six alternative futures on a foundation made up of trends analysis, and (2) our process for generating a concrete Army type for each alternative future. Put more simply, we need to show that there was some rigor in our creation of both a set of alternative futures and a set of corresponding army types. Figure 1 illustrates in broad terms the steps we undertook to achieve our final research product.

Building Alternative Futures

Our first task in preparing a set of alternative futures was to decide which variables would be the most important shapers of the international system during the next quarter century. Fortunately, we were able to draw upon existing Army planning work to accomplish this. Several 1990s-era drafts of The Army Plan argue that the future will be driven by developments in five areas: geopolitics, economics, demographics, technology, and the environment.¹ These five “development variables” proved to be an excellent starting point for our

¹ These variables were identified in drafts of The Army Plan that were circulated in November 1997.

Figure 1
Project Methodology



RAND MG219-1

work, covering most of the significant developments that will affect the environment in which the force will operate. The one shortcoming in this list of five objective development variables is that it is heavily structural and does not take into account ideational factors such as the possible rise of a new ideology that could challenge American interests, at least in certain regions (such as the militant Islamist fundamentalism that has gained strength in some regions recently). We believe that this shortcoming, while not insignificant, is also not fatal to our methodology. After all, any rival ideology would need to be backed up by some form of concrete military (conventional, WMD, guerrilla, or terrorist) or economic power to threaten the United States, and our framework can capture the implications of varying levels of hostile power.

The mechanism used to convert the development variables into alternative futures was to vary the slopes of the trend lines in each of the five according to their impact upon U.S. national interest. For

each of the five development variables, we posited three trend lines between the present and 2025: one that was beneficial to U.S. national interests (a “good” slope), one that was largely neutral (a “medium” slope), and one that was damaging (a “bad” slope). We then succinctly labeled the features of each trend line and produced a 5×3 matrix with the five development variables arrayed vertically and the three types of slopes (or “outcomes”) arrayed horizontally across the top. The cells of the matrix were then filled with the labels for each individual trend line. (The actual substantive matrix is presented in Figure 2.)

This development variable–trend slope matrix was the critical tool used to create our six alternative futures. It allowed us to bracket either end of the futures spectrum with best- and worst-case futures and then move toward the middle of the spectrum by creating

Figure 2
The Full Matrix of Outcomes

	Good	Medium	Bad
Demographics	Population stability	Regional overpopulation	Systemic demographic pressure
Geopolitics	Hegemonic stability or benign multipolarity	Peer competition or multipolarity	Nation-state collapse
Economics	Steady growth/ low inflation	Slowdown	Stagnation
Environment	Resource management	Water scarcity, soil erosion	Climate change, famines
Technology	Information technology boom, biotech growth	Information technology slowdown	Destructive applications

medium-outcome futures for the 2025 timeframe. Specifically, we began the process with the optimal scenario, one where all five of the development variables have good slopes through 2025. By combining the five good outcomes together, we were able to posit coherent portraits of two best-case alternative futures from the standpoint of U.S. national interest. We called these two best cases "U.S. Unipolarity" and "Democratic Peace." Following this, the opposite end of the spectrum was assessed by combining the five worst-case outcomes in the rightmost column of the matrix. The synthesis of these five "bad" slopes of the future led to the creation of a single worst-case 2025 world, a world that was entitled "Chaos/Anarchy."

Our process of creating worlds concluded with an assessment of the middle of the futures spectrum. Two medium-good worlds were built by combining mixes of medium- and good-outcome cells (Major Competitor and Competitive Multipolarity), while a single medium-bad world (Transnational Web) was created by combining a mix of the medium- and bad-outcome cells. It is important to note at this point that we did not attempt any good-bad hybrid worlds, because it seemed highly implausible that good and bad slope lines could exist simultaneously in any given single future. Our hypothesis was that a drastic downturn in any one of the development variables would drag the remaining four at least into the medium category, while a very good slope in one of the development variables would, by the same token, nudge the remaining variables at least into the medium category. It simply does not seem plausible that a very bad trend in global demographics, for example, could coexist with a highly positive trend in the global environment. There are certainly feedback loops between the development variables, and their directions cannot be isolated from one another.

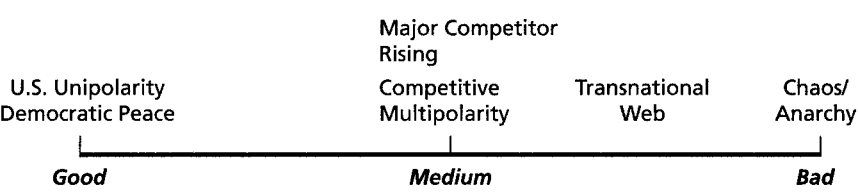
Theoretically, the analyst could develop 243 futures from the 5×3 matrix that has been produced. However, this strictly mathematical approach was not chosen for this exercise for four main reasons. First, many of the 243 permutations that would be produced by an exhaustive technical analysis would be so similar as to be virtually indistinguishable and, thus, would serve no useful purpose to policymakers consuming this research. Second, the goal of the work is to

come up with a representative spread of futures that cover different parts of the spectrum from stable U.S. unipolarity to complete anarchy in the international system. Such a spread does not require that every part of the spectrum be examined and studied. Third, the discussion of trends in Chapter Three gives the reader a qualitative idea of the composition of the building blocks used in the mixing and matching process. Fourth and finally, by way of sanity check, the six worlds produced here include virtually all the types of threats the United States could plausibly face over the next quarter century, from near-peer great power competitors to regional rogue states to guerilla/terrorist organizations and organized crime syndicates at the low end of the threat spectrum.

Figure 2 is a generalized version of the matrix that was used to generate the six worlds studied in this research. Figure 3, meanwhile, shows the six worlds arrayed along a continuum from good to bad.

The final part of the futures construction task involved the presentation of signposts that Army planners could use to estimate the increasing or decreasing likelihood of a given world's occurring. As was stated in the previous chapter, the 2010 timeframe is probably the point at which the signposts will be the most germane because the outlines of the 2025 international environment are likely to be hazy until then. We tried to make the signposts as easy to use as possible by linking them with measurable indicators such as level of economic growth in a certain nation and percentage of countries in the world

Figure 3
A Continuum of the Six Futures



with democratically elected governments. There is no fixed recipe for using the signposts to either reject or accept the possibility that a given future will actually occur. Much will certainly be left to the discretion of the Army's 2010 analysts, but it is safe to say that if more than half of the signposts for a given world are not in existence in 2010, then the analyst would have little choice but to assess that world as being not likely to come to pass.

One of the limitations of any trend-based approach, such as this one, is that it is not well equipped to take into account sudden discontinuities such as the 9/11 terrorist attacks on the United States or the rapid collapse of communism in Eastern Europe in 1989. Strategic surprises such as these can drastically change world politics and the foreign policy priorities of the larger powers with little or no notice. This particular alternative futures approach tries to manage this problem by using some signposts that reflect the recent occurrence of a discontinuity (e.g., a major ally turns against the United States, a major epidemic spreads around the world). This is not a perfect solution by any means, but it does offer an acknowledgment that the international system does not always move forward according to linear trend projections.

Moving from Alternative Futures to Armies

After the principal features of each of the six worlds were fleshed out in adequate detail, we began the process of generating concrete Army types that would be desired in each vision of the 2025 future. This process unfolded in four steps.

Scenario selection was the first of these steps. In order to build concrete army types that could be studied by force developers, it was important to put forth a specific contingency that each world would likely present to the U.S. Army. We strove to make each scenario the most demanding that could possibly arise in the world at hand because we wanted to ensure that the Army types we created would be capable of handling all of its possible eventualities. Therefore, we chose scenarios that involved capable opponents, harsh terrain condi-

tions, and (usually) long deployment distances from the continental United States.

Secondly, there was a need to set out the capabilities the Army forces involved would have to have in order to carry out their mission in each scenario. This was done through the use of the strategies-to-tasks methodology that has been employed in a number of other RAND Corporation studies for Department of Defense (DoD) clients.² The campaign objectives in each scenario were laid out from a joint perspective, then the operational objectives followed from these, and, finally, the operational tasks were spelled out. It was the operational tasks which were converted into a set of desired joint capabilities that Army forces might be able to contribute to a given scenario. Capabilities were stated so as to reflect the need to accomplish a very specific type of military activity. For example, some of the capabilities statements found in our various scenarios were:

- Deploy capable light forces rapidly to theater;
- Destroy cruise missiles in flight;
- Destroy/damage advancing light infantry columns;
- Disrupt field logistics sites/assembly areas;
- Destroy/damage satellites in orbit.

For each scenario, we developed lists of both critical and helpful capabilities for the Army to have. Critical capabilities were defined as those that were absolutely necessary for the campaign to be concluded successfully. Helpful capabilities were those that were deemed to be important for the U.S. campaign effort to succeed quickly and with low cost. Since this exercise was not formally constrained by cost, we took the total list of capabilities (critical and helpful) as the basis for proceeding with the next step, which is the formulation of "bundles of characteristics" for each scenario.

Although the scenarios were painted with a broad brush, the level of detail in terms of the threat posited is sufficient to allow for a

² See, for example, David E. Thaler, *Strategies to Tasks: A Framework for Linking Means and Ends*, Santa Monica, CA: RAND Corporation, MR-300-AF, 1993.

listing of desired characteristics for the Army. This analysis purposely shies away from recommending specific systems (e.g., Theater High-Altitude Area Defense [THAAD], Comanche) that the Army would need to accomplish a specific task.

We formulated our characteristics for each scenario as technical system types that meet the needs presented in our capability statements. Examples of force characteristics in our work included:

- Organic long-distance rotary-wing transport capability for passengers and cargo;
- Ground-based theater missile defense (TMD) systems with capability against both theater cruise and ballistic missiles;
- Autonomous precision-strike-capable deep fires rocket artillery with smart warheads;
- Stealthy reconnaissance strike helicopters with forward-looking infrared radar (FLIR) and long-range fire control radars;
- Ground-based kinetic kill anti-satellite (ASAT) missile system.

In each scenario, we combined all of the needed characteristics into a bundle that provided us with the outlines of an army type. We then labeled each army type with a succinct title that reflected its major purpose and mission.

Each of our six "armies of the future" includes more than just force characteristics; they are also described in terms of rough force structure size. We made estimates of the appropriate force structure size of each army based on the mission requirements, type of battlespace, and possible technological applications present in the scenario. To aid in our thought processes here, we consulted a number of RAND colleagues who have extensive experience with Army force structure and manning issues. Our force structure size estimates were the sum of the total deployable force and the table of distribution and allowances (TDA) (or nondeployable, stateside restricted) force. We did not employ any formal campaign models to produce our force structure estimates, instead relying on an informal Delphi process within RAND. The details of our force characteristics and structure analysis will be presented in Chapter Five.

The fourth and final step in our transition from alternative futures to concrete armies that can inform the Army's Future Force development process is to identify common force characteristics across all, or at least a majority, of our six army types. Such identification may allow Army force developers to take solid hedging actions by making early investments in those technologies that support force characteristics that will be useful regardless of the direction that the international environment takes between now and 2025. Our breakdown of desired capabilities in each scenario into "critical" and "helpful" categories could provide some further assistance to Army planners in the near- to mid-term future by pointing out other technologies that are promising candidates for experimentation and testing under the auspices of the Future Force initiative.

Now that we have completed a description of the methodology used in this study, in the next chapter we turn to detailed discussions of how we assess the different trends possible for each of our five development variables and how we used the resulting substantive matrix to actually create the six alternative futures.

Future Trends and the Creation of Alternative Futures

Now we turn our attention to the different possible trends in each of our five development variables: geopolitics, demographics, economics, technology, and the environment. Sources used in the preparation of the trends analysis presented here were a mix of policy, academic, and futurist works. It must be acknowledged that none of the trends in the five variable areas can be classified as “pure trends” that exist in isolation. Geopolitical trends, for example, are somewhat dependent on the ebb and flow of national economies, while environmental trends are surely influenced by demographic factors such as settlement patterns and population growth in agricultural areas. This report seeks to minimize this problem of overlap and complex feedback by concentrating on core metrics and indicators within each of the five trend areas, but cannot eliminate it.

Geopolitics

Geopolitical trends have to do primarily with the evolving structure of the international system and are concerned with the dynamics of the distribution of power.¹ Traditionally, realist theorists of interna-

¹ For the classical perspective on power distribution and the nature of the international system, see Kenneth W. Waltz, *Theory of International Politics*, Reading, MA: Addison-Wesley, 1979. Other major realist works include: Hans Morgenthau, *Politics Among Nations: The Struggle for Power and Peace*, 5th ed., New York: Knopf, 1973; Robert Gilpin, *War and Change in World Politics*, Cambridge, New York: Cambridge University Press, 1981; and

tional relations have concerned themselves with the distribution of power among nation-states; in the world of 2025, however, we must also consider the possibility that nonstate actors, both trans- and sub-national, will be in a position to rival some nation-states for power and influence in certain regions. Indeed, already today we see non-state actors like Al Qaeda, Hezbollah, and the Revolutionary Armed Forces of Colombia (FARC) having a more profound effect on U.S. foreign policy than many of the smaller nation-states.

Geopolitical projections also need to take into account intentions as well as capabilities. The rise of another state in the world with military and economic capabilities comparable to that of the United States would be far more serious if the state in question had declared interests that clashed directly with those of the United States. A potential "peer" having compatible interests would still pose a challenge, but perhaps not a threat. For example, if the integrationist trend in Europe really takes hold and leads to the development of a common European foreign policy and then on to an actual "United States of Europe," the resulting peer state would probably not pose an immediate politico-military threat to the United States (although it would definitely pose a serious challenge in the trade and investment spheres).² On the other hand, a China with a fast-growing economy and a recapitalizing military would almost certainly present at least an indirect politico-military threat to American interests in several key regions. With these thoughts in mind, it now behooves us to look at the good, medium, and bad geopolitical trends that might face the United States over the next quarter century.

Good Trends

The continuation of its position as the world's sole superpower and the institutionalization of the liberal, open international order that it has sponsored and supported since the end of the Cold War would

Fareed Zakaria, *From Wealth to Power: The Unusual Origins of America's World Role*, Princeton, NJ: Princeton University Press, 1998.

² Current difficulties in the U.S.-EU relationship are reviewed in Henry Kissinger, *Does America Need a Foreign Policy?* New York: Simon & Schuster, 2001, pp. 32-82.

represent very positive geopolitical trends for the United States. This kind of geopolitical "slope" would require the maintenance of qualitative U.S. military superiority over other major powers, U.S. political engagement in most regions of the world, and America's continued possession of the world's largest economy. Such a power position would be reinforced by U.S. success on certain transnational issues like a WMD nonproliferation regime and the solidification of the World Trade Organization (WTO). In addition, the United States would need to retain enough "soft power" in areas like cultural influence and domestic political legitimacy to remain a model for many other countries, including both established and aspiring democracies. Finally, these positive trends would also depend to some extent on the existence of increasing stagnation and disillusionment in "rejectionist" states that stand in opposition to the U.S.-led international order of the early 21st century (e.g., Iran and North Korea). Difficulties in such rejectionist states would serve to further legitimize the U.S. model of world leadership and democratic governance in the eyes of those nations that may be "on the fence" in terms of defining their own place and mission in the world (e.g., Ukraine, Indonesia, and possibly China).

This kind of positive slope could result in two relatively different geopolitical outcomes by 2025. First, it could result in a long-term situation of benign hegemonic stability in which the United States sets the rules and agenda of the international system and finds at least tacit acquiescence from most of the world's significant nation-states. A number of rejectionist states would remain outside the existing order and make periodic efforts to destabilize it through terrorism, attacks against immediate neighbors, etc., and this threat would require the United States to take fairly frequent military actions in certain regions—sometimes on a unilateral basis. Although it would have many allies and coalition partners in this geopolitical future, it could not always count on them to provide military support to U.S. operations because of the free rider problem and because of divergent threat perceptions.

A second possible geopolitical outcome from these positive trends could result if the power of the United States and its attrac-

tiveness as a political model became so great that liberal democracy would begin to take firm hold in virtually all of the significant powers of the world, to include Russia, China, Southeast Asia, and much of the Arab world. This result, which could be termed "The End of History" geopolitical vision for 2025, could cause the outbreak of peace in most parts of the world.³ The former Soviet Union would stabilize, the Arab-Israeli dispute would be resolved, and China would Westernize and forgo any interest in becoming a military superpower. Here the role of the United States would change from the sole superpower to perhaps the "first among equals" in a club of fully democratic great powers. This grouping of liberal democratic great powers would share common foreign policy interests and work hand in hand at the United Nations (UN) on most political issues.⁴ In this sense, while there would be no substantial military threats to U.S. interests in this geopolitical future, the relative power of the United States would probably be somewhat less than in the "sole superpower" geopolitical outcome. It is also worth noting that many scholars and analysts dispute the proposition that democracies cannot geopolitically compete nor fight wars with each other. Thus, it is not certain that even the spread of liberal democracy throughout most of the world would ensure peace and cooperation among the great powers. Nevertheless, since this vision of the future still meets (at least in our judgment) the not implausible test, we have included it as the possible culmination of favorable geopolitical trends.

Medium Trends

Medium geopolitical trends for the United States would involve a relative shift in the distribution of power in the international system so that one or more large states could challenge America's sole superpower status with authority. This change in the distribution of power could come about either through a sudden growth spurt in national

³ The idealistic view of the future of world politics is summed up in Francis Fukuyama, *The End of History and the Last Man*, New York: Free Press, 1992.

⁴ This kind of arrangement would resemble the Concert of Europe that held sway from the end of the Napoleonic Wars to German Unification (1815–1868).

power on the part of one or more other large states or through a relative decline in America's level of national power relative to competitors.⁵ In the next quarter century the most likely near-peer competitor to rise with hostile intentions against the United States is probably the People's Republic of China. Russia is a possibility here as well, while India, the EU, and Brazil are less likely candidates. We should not forget that a near-peer competitor need not be a single state, but could also be a coalition of states tied together by anti-Americanism. For example, it is not outside of the realm of reason to think about a Sino-Russian alliance forming in the early part of the 21st century with the stated goals of driving the United States out of East Asia and halting the further eastward expansion of the North Atlantic Treaty Organization (NATO).

A near-peer competitor would have several readily identifiable characteristics. Such a state (or coalition of states) would have a gross national product (GNP) at least half that of the United States, a population of 100 million or more, and a significant industrial/scientific base capable of producing innovative military and civilian products. On the strictly military side of the equation, such a competitor would have a conventional power projection capability at least within its immediate region, be able to leverage the ongoing revolution in military affairs (RMA), be able to place military assets into space, and have a strategic nuclear force well protected enough to maintain second strike deterrence against the United States.

Most analysts believe that a true near-peer challenge to the United States will not arise before 2020 or 2025 and that there will be plenty of advance warning—much like the British were able to clearly see the German threat (especially in naval terms) looming on the horizon as early as 1900. Thus, the signposts part of this analysis would seem to be quite useful in the event that a near-peer competitor world does start to emerge.

⁵ For a recent contribution to the literature on measuring national power, see Ashley J. Tellis et al., *Measuring National Power in the Postindustrial Age*, Santa Monica, CA: RAND Corporation, MR-1110-A, 2000, esp. Ch. 4.

One intriguing question for policy planners to consider in the event that the medium geopolitical trends come to pass is whether it would be easier to deal with one or several near-peer competitors. It would appear as if a bipolar structure (one competitor) would be preferable to a multipolar structure (more than one competitor) because a bipolar world would allow the United States to better focus its resources and also because there would be much less chance of strategic miscalculation and highly risky balancing/bandwagoning behavior in a bipolar environment. Indeed, the theoretical work of prominent political scientist Kenneth Waltz confirms this view.⁶ Nevertheless, there would be some advantages to a multipolar environment as well. Certainly, a multipolar world would offer great chances for American statesmen to find and exploit cleavages between the other great powers and thus increase American security through relatively cheap diplomatic means, as opposed to the far more expensive path of large-scale military buildup. On balance, however, bipolarity would be the easier to handle under most circumstances.

Bad Trends

In our view, bad geopolitical trends for the United States would be those that work to drastically change not just the distribution but also the nature of power in the international system. Specifically, a massive increase in the power of either transnational or subnational actors at the expense of the nation-state would be ominous for the United States because the threats posed by such actors would be far more amorphous and difficult to deal with than the more well-defined threats posed by nation-states. To a certain extent, there is already an increase in the power of nonstate actors going on in the world—this is being heavily driven by the information revolution and the rise of the Internet. However, the current levels of diffusion of power are not large enough to threaten the viability of large numbers of nation-states. The type of “bad” trends described here would work to actually undermine the viability of the nation-state in several key regions,

⁶ Waltz, *Theory of International Politics*.

leaving the United States, as one of the remaining healthy nation-states, to confront a very turbulent and uncertain security situation.

Transnational actors that could be empowered by "bad" geopolitical trends are: multinational corporations, organized crime syndicates like the Chinese Triads or the Russian Mafia, international terrorist groups like the bin Laden organization, special interest "peace and justice" groups, and ethnic diasporas. Many, if not most, transnational actors empowered by the trends we posit here would use that power for relatively benign purposes; however, some will undoubtedly have both the capability and the intention to threaten American interests, and for that reason they will be of interest to Army planners. Perhaps the principal challenge presented by transnational actors would be their ability to operate in a distributed fashion, that is, from multiple locations around the globe simultaneously.

Subnational actors that could be empowered by "bad" geopolitical trends would include: local warlords, ethnic separatists, religious separatists, narcotics traffickers, and ideological revolutionaries. In order to deal with these types of groups, the U.S. Army would almost certainly have to participate in, or at least support, counterinsurgency operations (COIN). Some of these COIN operations would probably take place in urban areas as a result of the increasing urbanization occurring in much of the developing world. The problem of hostile subnational groups will be exacerbated in 2025 by the ready availability of smuggled nuclear, biological, and chemical (NBC) weapons caused by the increasing porosity of borders resulting from the decline in the power of many nation-states. Many hostile warlords and ethnic separatists could consequently have ample stocks of such weaponry on hand during any U.S. Army intervention.

Demographics

Compared to the other four development variables being discussed in this report, quantitative demographic trends through the next 25 years are much clearer and easier to predict. Demographers have produced sophisticated mathematical models that are quite accurate in

estimating the growth and size of national populations for a generation into the future. Therefore, we have a good sense of the broad parameters of the global population situation in 2025; the critical task for this study has been to assess the regional effects of demographic factors. This includes not only quantitative issues but also the interactions between population size and growth and the resource availability, distribution patterns, and institutional flexibility within a given society.⁷

The latest UN estimates are that the world's total population will increase from 5.9 billion in the late 1990s to 9.4 billion in 2050.⁸ This represents, over the near term, the addition of about 80 million people per year (the population of Germany). Clearly, global population growth is still significant. However, it is slowing gradually. The rate of growth in the 2025–2050 timeframe will be significantly less than in the 2000–2025 period. This slowing is taking place because a number of large developing countries are witnessing major declines in their fertility rates. Three prominent examples are Indonesia, Mexico, and Brazil.⁹ These fertility declines are due to a combination of increasing rates of adult female literacy, the emergence of “middle class” consumption patterns in sections of these societies, and government-supported family planning programs. There are still a number of large countries in the developing world where fertility rates remain high because the factors mentioned above are partially or wholly absent. These nations will continue to see very rapid absolute population growth through the next generation. Nigeria, Pakistan, and the Democratic Republic of the Congo fall into this category.¹⁰ It should be noted that most demographic models have not yet been able to incorporate the likely effects of the acquired immune deficiency syn-

⁷ Thomas F. Homer-Dixon, *Environment, Scarcity, and Violence*, Princeton, NJ: Princeton University Press, 1999, pp. 47–72.

⁸ United Nations Population Division, *World Population Prospects: The 1996 Revision*, New York: United Nations, 1996, pp. 3–5.

⁹ Indonesia = 3.7, Mexico = 3.1, Brazil = 2.5. Source: Population Reference Bureau, 1998.

¹⁰ Nigeria = 6.5, Pakistan = 5.6, DR Congo = 6.6. Source: Population Reference Bureau, 1998.

drome (AIDS) epidemic into their predictions of population growth in the developing world. Therefore, it is possible that the long-term growth rates in certain high-fertility countries that are located in regions hard-hit by AIDS (like Sub-Saharan Africa) will be substantially lower than currently expected. It is simply too early to tell what the final impact of this disease will be on global demographics.

One cannot cover the topic of demographic trends adequately without mentioning the emergence of chronic low fertility in a good part of the developed world. Several major countries in Western Europe, as well as Russia and Japan, are experiencing very low fertility rates. Russia, as a matter of fact, will probably experience substantial population declines during the next two decades.¹¹ Nations like France, Germany, and Italy will face very low to slightly negative growth during the 2000–2025 timeframe. The United States is in better shape than most other developed countries; with its 2.1 fertility rate (near replacement) and continued immigration, the U.S. population should continue to grow at a steady rate well into the 21st century.

Good Trends

The best trend for the U.S. national interest with regard to demographics would be the achievement of a balance between population growth and resources, consumption patterns, distribution patterns, and political institutions throughout the developing world. Here we would see major developing nations working to either control their fertility rates or to adapt their resource availability levels, consumption and distribution patterns, and institutions so as to meet the expectations of young and growing populations. In this effort they would be assisted by official foreign aid from many developed nations (including, hopefully, the United States) as well as programs sponsored by the UN and nongovernmental organizations (NGOs).

¹¹ For a comprehensive review of Russia's demographic prospects, see Julie S. DaVanzo and Clifford Grammich, *Dire Demographics: Population Trends in the Russian Federation*, Santa Monica, CA: RAND Corporation, MR-1273-WFHF/DLPP/RF, 2001.

In this kind of future, political instability related to population growth would be kept to a minimum. Mass migrations caused by famine and cropland depletion would be infrequent, and rebellions/revolutions against existing regimes because of the strains placed on weak infrastructures by population growth would be scarce as well. Ethnic and communal violence driven by competition for increasingly scarce natural resources could be kept to a minimum by better management of agriculture and effective land distribution programs. A balance of this kind existing across multiple regions would also create conditions conducive to free elections and transitions to democracy in a number of previously authoritarian states.

Medium Trends

Medium trends in the demographics area would be those leading to a situation of imbalance between population growth and resources, consumption patterns, distribution patterns, and political institutions in a few key strategic regions. In these areas of the world, growing populations that feature a large "youth bulge" would overtax the ability of the regime in power to make the necessary resources, infrastructure, economic opportunities, and political influence available to the ordinary citizen. The result will often be the emergence of radical ideologies, increased class and ethnic conflict over dwindling resources and influence, and fierce struggles over proposed changes in resource and land distribution practices. Inevitably, instability of this kind will lead to revolutions and serious communal/ethnic strife.¹² Violence of this type may threaten American security interests in strategically important regions and could also force American military intervention, since revolutionary states often serve as magnets for larger regional conflicts, and intense communal/ethnic strife (especially in areas where there are mixed settlement patterns) tends to smolder for long periods if there is no intervention by outside forces.

Since longer-term demographic trends can be forecast with more accuracy than those seen in the other four development variables of

¹² Brian Nichiporuk, *The Security Dynamics of Demographic Factors*, Santa Monica, CA: RAND Corporation, MR-1088-WFHF/RF/DLPF/A, 2000, pp. 39-47.

this study, it is possible to identify some areas of the developing world that would be candidates for instability in the event that these medium trends indeed do come to pass. The Afghanistan/Pakistan area in South/Southwest Asia is certainly a prime candidate for future conflicts caused by social stresses that can be traced back to demographic factors. North Africa is a second region of concern from the demographic standpoint. Algeria's 1990s civil war provides us with a recent example of how burgeoning youth populations, when superimposed upon limited economic opportunity and fairly rigid political institutions, can contribute to the creation of social breakdown and an escalating spiral of revolutionary violence. In the 2025 timeframe, one has to consider the rapid population growth rates now taking place in Libya as a potential catalyst for instability—possibly even for the emergence of a fundamentalist regime bent on challenging Egyptian military superiority in North Africa and restarting a WMD program. Such a development would certainly be of concern to U.S. policy-makers.

Bad Trends

Bad demographic trends from the perspective of the U.S. national interest would, in our view, be those that lead to the type of instability we discussed above in the medium trends section on a more global basis.¹³ These trends would lead to widespread imbalances between population growth and resource availability, consumption patterns, distribution patterns, and political institutions; such imbalances would affect regional politics in Latin America, Central America, Sub-Saharan Africa, North Africa, the Middle East, South Asia, Southeast Asia, Central Asia, and China. This kind of virtual systemic breakdown would most likely be accompanied by the collapse of state structures across much of the developing world, the emergence of warlordism and anarchy on a massive scale, and consequent mass migrations across and between regions. Large refugee flows into the developed nations of Europe and North America could be expected,

¹³ For a dark vision of where bad demographic trends could lead the world, see Robert D. Kaplan, "The Coming Anarchy," *Atlantic Monthly*, February 1994.

and these flows would be large enough to pose a significant security challenge to leaders in those countries. A crisis of this kind in 2025 would likely be the result of serious pressures on both the demand and supply sides of the demographics problem. In other words, fertility rates in several major developing world states would not undergo the declines currently expected, and at the same time there would be a lack of accommodating political, economic, and social reform across the developing world. This kind of unfortunate convergence would be necessary in order for this particular pessimistic outcome to take place.

Economics

This is the most difficult area in which to make the kind of forecasts required here. The global economy of the early 21st century is an incredibly complex mechanism that seems to be prone to wild gyrations in its securities and currency markets that do not seem to undermine the foundations of prosperity in the United States and Europe. Many emerging market nations seem to rise and fall based not on economic fundamentals but on investor perceptions and market psychology. Because of the complexity of the world economy at the outset of the 21st century, our trend lines for the period between now and 2025 are focused on some simple core issues and are not based on an exhaustive technical analysis.

Good Trends

In the developed nations of the world's "North," good economic trends in the next 25 years would take the form of long periods of sustained, steady growth rates (in the 3–5 percent range), long-term low inflation, single-digit unemployment, small government budget deficits (perhaps even some surpluses in selected countries), rising capital markets, a steady pace of technological innovation, and solvency in public sector pension funds, medical care programs, and social security benefits. This last item will become increasingly important throughout Europe, Japan, and North America as the population

cohorts of elderly persons increase steadily. In short, finance ministries and central banks across the North will have found methods for dampening the fluctuations of the business cycle so as to prevent severe recessions and for keeping instability in emerging equity and currency markets from affecting the economies of the developed world. The continued existence of institutions comparable to the World Bank and International Monetary Fund (IMF) today would be necessary in order for this kind of outcome to happen.

In the South, or developing economies of Africa, Asia, and Latin America, good trends would manifest themselves in terms of stable currencies, steady forward-moving development programs, and continued efforts at privatization throughout the industrial sector. These positives would be backed up by anticorruption campaigns as well as large-scale efforts to better regulate the banking systems of several key emerging market nations like Russia, Indonesia, and South Korea. Diffusion of agricultural technology advancements from the North as well as the enactment of fair land distribution patterns in some of the more agrarian developing states (e.g., the Andes nations of Latin America, Pakistan, India, and the Philippines) would also help to accentuate good economic trends. Needless to say, foreign investment from the North would have to continue to flow into the developing world for good outcomes to occur, and relatively more of this flow will need to be devoted to industrial and infrastructure investments that are long term, while relatively less should be placed into shorter-term, easily liquidated investments like currency futures and real estate.

Medium Trends

In the developed North, medium economic trends would be those that would create vulnerability to the ups and downs of the business cycle, meaning that the economies of North America, Europe, and Japan would be subject to boom and bust periods that would be difficult to predict. Severe recessionary episodes would occur every five years or so. Growth would be moderate during periods of expansion (2–3 percent), and trade tensions between the EU, United States, and Japan would flare up periodically, especially over agricultural and

software products. Securities markets in New York, London, and Tokyo would not rise nearly as rapidly as they did during the 1995–2000 period, and major “crashes” would take place every 18 months or so. Structural unemployment would plague the larger economies of Europe (Germany, France, the United Kingdom) and wages would stagnate throughout the EU. Technological innovation would continue, but at a slower pace than during the final decade of the 20th century. Inflation would reappear in the United States and require the Federal Reserve to keep interest rates reasonably high, thus harming the bond market.

The less-developed world would feel the effects of this slowdown in the North. Increasing interest rates in the North would increase the number of developing countries defaulting on their loans from U.S., European, and Japanese banks. Currency crises would occur with regularity as well, effectively shrinking the middle class in many emerging market nations. As a result of this increased uncertainty, growth would fluctuate in the developing world and sustained development programs would frequently be disrupted. This kind of economic turbulence would begin to create political instability as well. Many democratic or semi-democratic regimes in the developing world would find themselves facing violent opposition movements seeking the establishment of authoritarian systems that could insulate against the uncertainty of the global economy. There would be an upsurge in the number of insurgencies and coup attempts throughout the developing world, thus creating opportunities for intervention by larger foreign powers hostile to American interests.

Bad Trends

A bad economic slope line from the perspective of U.S. national interests would be one leading to the return of “stagflation” to the developed world in a repeat of the economic malaise of the 1970s. High inflation would be accompanied by high unemployment (double-digit at times) throughout North America, Europe, and Japan. High interest rates would choke loan markets, and commodity prices would rise. Wild fluctuations in commodity prices could occur in this world. Trade deficits might balloon in the developed world as hard-

pressed manufacturers moved more plant capacity to the developing world in order to fully take advantage of low labor costs. Recessionary periods would become relatively longer and expansionary periods relatively shorter. Standards of living would decline across the board, and consumer spending would drop significantly from 1990s levels. Efforts to revive the economies of the North through increased government spending would have some effect but would also serve to bring back large budget deficits (even in the United States). Tax increases undertaken to reduce these looming deficits would further weaken the rate of economic growth. Securities markets would suffer greatly, as overall stock market indexes in New York, London, and Tokyo would stagnate for long periods.

This "bad" outcome would cause a corresponding downturn throughout much of the developing world. One category of countries could experience periodic upswings in this world: major oil exporters who could benefit from sudden surges in the price of oil. These countries would accumulate large foreign exchange reserves and be able to make large investments in their domestic infrastructures. However, over the long term, their prospects would be dim as well, since the high price of oil would stimulate increased domestic production in the developed world, thus leading to an eventual glut of oil, as occurred in the 1980s and 1990s. The non-oil exporters of the developing world would face dismal prospects under this future—with decreasing levels of foreign investment, negative growth, and decaying national infrastructures. Basic development assistance in agriculture would largely dry up as well, driving increased migration from impoverished rural areas into large cities, where conditions would be only marginally better and, in some cases, even worse than in the countryside. Under strains such as these, we could well see state breakdown taking place in many regions of the South in the 2025 timeframe. State authority would be replaced by anarchy, warlordism, and, perhaps, the intervention of transnational nonstate actors seeking to profit by exploiting the cheap labor and natural resources of the more destitute regions of the developing world.

Technology

Good Trends

In the technological area, good trends would be those leading to a "long boom" in productivity and increased quality of life across the globe.¹⁴ In this vision of the future, the period between 2000 and 2025 would witness three waves of technological advancement: the completion of the information technology revolution, the commencement and acceleration of a biotechnology revolution, and the beginnings of an alternative energy revolution.

The remainder of the information technology revolution would bring about more expansion of the Internet as well as greater accessibility, faster processors, more advanced personal wireless communication, the creation of a new interactive, customized media industry, the explosion of online commerce, and the proliferation of networked, distributed organizations throughout the private sector that operate faster and more efficiently than was possible with the old hierarchical model of corporate structure. All of this would have positive consequences for the wealth and prosperity of nations throughout the world.

Perhaps around 2010, just as the information revolution begins to reach its physical limits, a biotech revolution would begin under this version of the technological future. Vast, exponential increases in human understanding of genetics and organic chemistry cause the appearance of a host of new gene and drug therapies that increase the health and quality of life of millions of people. Many genetic diseases and birth defects are permanently eradicated, while a variety of potent infectious diseases that threatened developing regions of the world in the 1990s (e.g., Ebola) are met with new generations of antibiotics and antiviral drugs. Agricultural productivity is increased for many key crops like corn, wheat, and rice as well as in the raising of cattle and other livestock. It is even conceivable that this kind of biotech

¹⁴ For an extremely optimistic view of the technological future, see Peter Schwartz and Peter Leyden, "The Long Boom: A History of the Future, 1980–2000," *Wired*, Vol. 5, No. 7, July 1997, pp. 115–140.

revolution would bring about so-called DNA computing, done at the genetic level in order to accomplish great advances in the area of parallel processing. This innovation would permit the information revolution to restart itself sometime around 2015–2020.

At the tail end of our timeframe (2020–2025) the good trends seen here would herald the beginning of an alternative energy revolution replacing existing fossil fuels with an array of cleaner energy sources that reduce damage to the environment without harming industrial productivity or affecting personal means of transportation. Electric motors for automobiles and trucks would be the start of this process, to be followed next by small natural gas motors, and, finally, the world would witness the introduction of hydrogen fuel cells for use in motor vehicles. These changes would also affect the infrastructure of the electric utility industry throughout the world, making it much cleaner and no less productive.¹⁵

Medium Trends

Medium trends would be those that lead to a slowdown in technological growth: the information technology revolution would slow down around 2010–2015 due to cost considerations, saturated consumers, and unexpected difficulties in pioneering new ways of increasing the number of circuits on a semiconductor chip, while the biotech revolution's start would be pushed back by a decade or so. This type of slowdown would be most likely to occur if there was a more general downturn in the global economy. In addition to the forgone opportunities to increase productivity and quality of life, there would be a dark side to this set of trends as well. In this vision of the future, the slowdown in the growth of information technology would reduce growth in the accessibility of the Internet to many low-income individuals in the developed world as well as to many of the poorer nations of the developing world. This kind of institutionalized disparity in access to advanced technology would create social fissures within the societies of the developed world as well as increasing re-

¹⁵ Schwartz and Leyden, "The Long Boom."

sentiment within some quarters in the developing world toward the continuing technology gap.

Bad Trends

The most destructive technological future that we can imagine is one in which the pace of technological advance is quite rapid in both the information and biotech fields, but destructive applications of the new technologies are the ones that come to prominence. For example, if the advancements in information technology were manipulated by some in the private sector to create very sophisticated electronic eavesdropping equipment that could monitor the lives of private citizens in extreme detail with little chance of ever being detected, this could undermine the democratic political systems that have now been put into place in much of the world. By the same token, if the biotech revolution were to be hijacked by those interested in developing biological weaponry, genetic-specific weaponry, and super-addictive drugs, then technological advance would create political and social instability rather than increased peace and prosperity. Warfare would become more destructive, terrorism could have a greater impact than ever before, and social ills such as violent crime and drug abuse could increase, especially in large cities.

These trends would probably have the effect of changing the nature of power in the international system in an unfavorable way. Both violent subnational groups (like warlords, ethnic separatists, and ideological terrorists) and transnational organizations with enough money to access the new surveillance and eavesdropping technologies (like transnational criminal organizations and certain multinational corporations) could be empowered at the expense of democratic nation-states.

Environment

Good Trends

A set of good environmental trends would keep each of four sets of environmental problems from having a significant effect on the inter-

national system. Climate change through global warming would not affect the location of key agricultural fertility zones at all, nor would sea levels rise to an extent great enough to cause large-scale population dislocations in any strategic regions. Problems of fresh water scarcity due to increasing population pressures and residual pollution caused by the improper use of pesticides and fertilizers would exist in areas like Central Asia's Ferghana Valley and the Euphrates River basin (Turkey, Iraq, Syria), but these problems would be managed through a mix of diplomacy and astute technical measures like effective conservation programs and the employment of desalinization technology. Soil depletion in the developing world would be stabilized through UN and other agricultural assistance programs that would promote crop rotation as well as the use of new hybrid crops that produce larger yields on smaller plots of land. This would help to reduce the number of rural-to-urban migrants in countries as varied as Brazil, Turkey, and India as well as lower the number of migrants moving across national borders and overburdening the infrastructures of neighboring states that are ill-equipped to feed, clothe, and house them. Finally, the process of deforestation in nations like Haiti and the Philippines would be halted or at least slowed by land reform programs that permitted small farmers to retain their holdings in high-fertility areas and not be forced by skewed distribution laws to move onto forested upland areas that have to be cleared before they can be farmed. Such a development would preserve the hydrological cycle in many regions, reduce pollution and desertification, and also cut into the number of landless laborers wandering the countryside or moving into urban shantytowns. Ultimately, there are linkages between these kinds of improvements and political stability in many parts of the developing world.

The type of outcome produced by the good trends would likely be one in which American foreign policy would have fewer refugee crises and internal insurgencies to deal with. However, it should be noted that the occurrence of a good environmental future is not simply the result of technical measures, as political measures such as land reform can also play a constructive role in this area.

Medium Trends

In this case, climate change would not occur, but water scarcity, soil depletion, and deforestation would not be solved and would emerge as significant generators of both internal and external conflict. Armed conflicts over scarce fresh water could be expected to simmer in the Euphrates River basin, Central Asia (Uzbekistan versus Kyrgyzstan), and the Nile River Valley (Egypt versus Sudan). The use of dams to exercise coercive control over a neighbor's water supplies in times of friction would become ever more common. At the same time, continuing processes of deforestation and soil depletion (driven partially by failed or stillborn land reform programs) would lead to increased migration, both within and between nations, in Africa, Asia, and Latin America as well as to increased domestic instability and the rebirth of radical revolutionary movements in nations like El Salvador, Peru, Mexico, the Philippines, Pakistan, Bangladesh, Ukraine, and Indonesia. This kind of environmental stress would not overturn the international order the United States is striving to create, but it would create opportunities for potential geopolitical rivals to insert themselves back into critical regions as antagonists of the United States. It would also raise tensions between key regional states having significant military power (e.g., Iraq and Syria, Egypt and Sudan), thus raising the specter of destructive regional wars that could escalate to include WMD use or draw in outside powers (like the United States) on opposing sides.

Bad Trends

The worst-case outcome in the environmental realm would be one in which significant climate change occurs, touching off large-scale migrations, changes in the agricultural productivity of large swaths of territory, and the submersion of some islands and coastal areas due to melting of parts of the polar ice caps. These developments would have the potential to wreak havoc on existing political alignments and on the power potential of certain nations. The end result in terms of effect on American interests could be problematic. Changes in the very nature of power could result from these kinds of environmental upheavals.

For example, large-scale climate change could move the world's zones of top agricultural productivity northward, thus rendering Siberia relatively fertile and parts of southern India more barren. Coastal nations like Bangladesh could lose significant chunks of land to rising sea levels, causing more migration into that nation's cities as well as across borders into neighboring states like India and Burma. Some nations in southern Africa could suffer mass desertification under this scenario, leading to economic depression, reduced standards of living, and increased civil strife. Perhaps the critical factor in any climate change scenario is time. If the change occurs rapidly, there may not be time for American policymakers to help construct political and economic structures that can accommodate the new realities. But if the change is gradual, the outcome may not be as apocalyptic as portrayed above; indeed, there could be some benefits to be accrued in certain regions that are of great importance to the United States. Overall, however, it is likely that climate change on this kind of scale would generate significant political instability during the transition period, and U.S. policymakers would be well advised to deeply consider the geopolitical implications of major climate change at the first signs that it might be starting to take place.

Next Step

Now that the various types of trends possible for each development variable have been laid out as "building blocks," we turn to a discussion of the six alternative futures that are the product of various combinations of these building blocks.

Describing the Alternative Futures

This chapter is devoted to a more detailed description of the six alternative futures for 2025 that were introduced briefly in Chapter Two.¹ For each of the six, an effort will be made to cover the detailed features of the world, explain the planning scenario that was chosen as the best illustration of the military demands it would place upon the Army, and provide signposts that would serve to either confirm or refute the relevance of each future in the 2010–2015 timeframe. It should be noted that the planning scenarios are most definitely not meant to convey predictions or assumptions about the specific political course of a given country or region. Instead, they ought to be treated as illustrative constructs used to depict stressful situations similar to those the Army would face if the real world of 2025 approximates a certain future.

U.S. Unipolarity

U.S. Unipolarity is a future in which the United States remains the world's dominant power across the board, i.e., militarily, economically, politically, and culturally. The United States has a large, bal-

¹ Some of the major works in the alternative futures literature are: Jacquelyn K. Davis and Michael J. Sweeney, *Strategic Paradigms 2025: U.S. Security Planning for a New Era*, Herndon, VA: Brassey's, 1999; Charles W. Taylor, *Alternative World Scenarios for a New Order of Nations*, Carlisle, PA: Strategic Studies Institute, U.S. Army War College, 1993; and Lt. Gen. Jay W. Kelley, *2025 Executive Summary*, Maxwell Air Base, AL: Air University Press, 1996.

anced military with superior technological capability on the ground, in the air, in space, and on the seas. This technological capability is backed up by solid training (often employing new computer simulation technologies) and a high level of human capital. U.S. defense budgets in the 2025 timeframe hover around the \$300 billion level (constant FY99 dollars), and a bipartisan consensus has been secured in the Congress for a long-term commitment to this level of effort for defense. American power projection capabilities remain unrivaled and have improved in absolute terms compared to the 1990s due to technological breakthroughs in the areas of strategic airlift and fast sealift, while significant progress has been made in the field of theater missile defenses, especially ground-based kinetic kill interceptors and airborne laser systems. Furthermore, DoD's deployable command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) architectures have improved considerably, providing seamless connectivity between the service components of a joint force and offering commanders the opportunity for real-time target identification and very rapid battle damage assessment (BDA). Finally, Washington's military position is rounded out by a robust set of forward presence commitments in Central Europe, the Far East, and Southwest Asia.

Economically, the American GNP remains at least double the size of those of other advanced great powers (e.g., China), the dollar remains the world's de facto currency, American debt and equity markets have retained their dominant position, and the U.S. economy still produces consistent GNP growth (2–3 percent annually), low unemployment rates, and low inflation. All of this is bolstered by America's continued entrepreneurial dynamism, which continues to lead the world in the identification of new products and markets in the information and biotech fields. Steady fiscal policies are producing small federal budget surpluses in some years and small deficits in others.

In political terms, American diplomacy is widely respected around the world for its fairness and attention to human rights and economic development. American political intervention occurs regularly in a wide swath of regions around the world, from Central

America to East Central Europe to Southeast Asia. Several intractable regional conflicts are held in check only by the prestige of American-brokered peace initiatives. At the United Nations, the United States sometimes finds itself outnumbered in the Security Council and has to rely on its veto power more often than in the 1990s, but is still clearly the driving force behind many of the UN's international initiatives. At the transnational level, the United States has had a number of significant successes, including the deepening of the WTO free trade regime, the continued survival of much of the nonproliferation treaty (NPT) framework, and the reformation of the controversial International Criminal Court (ICC). Congressional opposition to targeted foreign aid programs has waned over the years, and the United States is now able to disburse increasing amounts of development assistance to key allies in the developing world, assistance that seems to be helping to preserve stability in parts of Africa and Latin America.

At the cultural level, American "soft power" has as much appeal abroad as it did in the 1990s. Several attempts by the leadership of the EU to create a Euroculture that could challenge U.S. culture across the world have failed, as American music, movies, and TV programming continue to grab huge market shares from India to Iceland. Senior American policymakers are becoming more aware of the importance of this soft cultural power and are working ever harder in the WTO to ensure that the remaining barriers to the export of American cultural products are further reduced.

U.S. Unipolarity assumes that the other great powers in the world (China, Russia, the EU, and India) are both unable and unwilling to actively challenge the American-led international order. They are unable because of the continuing vitality of the U.S. military and economy; unwilling because they are all accruing substantial economic benefits themselves from the stability provided by America's international leadership. However, just as is the case today, these other great powers would not be averse to providing aid and support (including weapons sales) to those rogue regional powers (or rejectionist states) that would be actively working against U.S. interests in several key strategic regions. By the same token, this vision of the fu-

ture contains a fair amount of general instability in the poorer states of the developing world due to famine, natural disaster, communal/ethnic strife, and episodic warlordism. These "Fourth World" problems would periodically move onto the front burner of official Washington due to international media attention and thus demand some kind of a systematic response, possibly including the commitment of military forces.

In this world, we posit two regions where rogue states pose an especially significant risk to American security interests: Southwest Asia and Southeast Asia. In Southwest Asia it is assumed that while the Baathist regime in Baghdad has been removed from power and Iraq has become a friendly state, Iran has increased its conventional power projection capability and also succeeded in building up a robust underground arsenal of biological and chemical weaponry as well as a stockpile of theater-range ballistic missiles. Iranian naval and marine forces now are a real threat to close the Straits of Hormuz as well as to launch an amphibious assault upon the United Arab Emirates (UAE) and/or Bahrain. In addition, the Iranian intelligence services have undertaken to incite a fundamentalist revolution in Saudi Arabia and have established numerous contacts with Saudi resistance leaders; Tehran also is establishing a covert arms pipeline into the Shiite areas of Saudi Arabia. Clearly, Iran, in this future, is striving to become the regional hegemon in the Persian Gulf area.

Southeast Asia is also an area of concern in the U.S. Unipolarity world of 2025.² A resurgent Indonesia led by a radical Salafist/Wahhabist clique is our notional threat in this region. After a period of economic travails in 1997–2005 (a period in which East Timor achieved independence), Jakarta stabilized its situation and began 15 years of strong economic growth under the auspices of a democratic regime with strong ties to the West. Unfortunately, in 2020, the pro-

² See Angel Rabasa and Peter Chalk, *Indonesia's Transformation and the Stability of Southeast Asia*, Santa Monica, CA: RAND Corporation, MR-1344-AF, 2001; John Bresnan, *Managing Indonesia*, New York: Columbia University Press, 1993; Peter Chalk, "Political Terrorism in Southeast Asia," *Terrorism and Political Violence*, Vol. 10, No. 2, 1998; and Richard Sokolsky, Angel Rabasa, and C. R. Neu, *The Role of Southeast Asia in U.S. Strategy Toward China*, Santa Monica, CA: RAND Corporation, MR-1170-AF, 2000.

Western government is abruptly overthrown in a coup staged by a group of Wahhabist generals who are financially supported by the remnants of the old Jemaah Islamiah network. After purging all non-Islamist elements from the senior ranks of the military and intelligence services, the new Islamist junta engages in a brutal suppression campaign against secular and moderate groups across the archipelago. Many members of Indonesia's former regime escape into rural areas and form guerrilla groups that harass the military. Some former regime officials also begin to lead campaigns of civil disobedience. By 2024, large-scale strikes are spreading throughout the capital Jakarta, and it is clear that the radical junta is starting to lose its grip on power. In desperation, the junta begins to escalate tensions with neighboring states, particularly Malaysia, in a last-ditch bid to appeal to Indonesian nationalism. Secular opposition leaders issue appeals from their hiding places for the public to reject this attempt at domestic mobilization.

At the beginning of 2025, the Indonesian junta formally leaves the Association of Southeast Asian Nations (ASEAN) and declares its main foreign policy aim to be the removal of the "corrupt Western-supported puppet regimes in Singapore, Kuala Lumpur, and Bangkok." Within days, small Indonesian special forces units begin to mount armed provocation missions across the Indonesian-Malaysian border on Borneo in the hope of stimulating a Malaysian response strong enough to justify an Indonesian attack on that country.

By 2025, the Indonesian military has grown to dwarf those of its neighbors. Jakarta fields a large infantry army with a few elite amphibious divisions, several squadrons of high-performance Russian-made interceptor aircraft, over 150 mobile and fixed launchers for global positioning system (GPS)-guided theater ballistic and cruise missiles, and a capable coastal navy with German-manufactured diesel submarines, a handful of guided missile destroyers and frigates, several squadrons of fast attack craft, and a major arsenal of mines. As the year 2025 progresses, the rhetoric out of Jakarta against Malaysia is becoming increasingly strident, and the Indonesian military presence arrayed along the two nations' border on Borneo is increasing. Making the situation even worse is the fact that Malaysia's military

has weakened considerably since about 2015 due to draconian defense cuts made by the government during a prolonged recession. Readiness especially has suffered.

Other security concerns for Washington at this time include: political anarchy in the Democratic Republic of the Congo due to ethnic conflicts, and social instability in Venezuela caused by the great damage inflicted by a recent hurricane. Neither of these problems poses as great a military threat to U.S. interests as those presented by Iran and Indonesia.

Signposts

Each of the six futures comes with a short list of illustrative signposts that can be used during the first decade of the 21st century to periodically check on the direction the future is taking. The signposts are merely indicators of the likelihood that a given world could indeed emerge in 2025 to confront the U.S. Army. For U.S. Unipolarity, the following signposts were selected as appropriate:

Economic

- U.S. GNP projected to remain world's largest.
- U.S. has clear advantage in the next generation of growth technologies (biotech, robotics).

Military

- U.S. defense budget on slight upward trend.
- No other nation has mastered the recent RMA.
- Investments abroad in power projection are low.

International

- Chinese economic growth has cooled off, Russia still struggling with reform.
- U.S. retains leadership in a revitalized and expanded NATO.
- Rogue regional powers are unable to build mature WMD arsenals.

If all or most of these signposts are fulfilled in the 2010–2015 timeframe, it would seem very likely that we would be on a trajectory

leading toward a U.S. Unipolar future. Conversely, if more than two (or certainly three) of the signposts do not hold true at that time, then U.S. Unipolarity should begin to seem implausible to the analyst. The signposts are weighted equally; they should all be viewed as having equal importance. This principle of equal importance of signposts holds throughout all of our six alternative futures. It should also be noted that not all of the signposts lend themselves to clear-cut "coding," as the measurement of some of them (such as the internal situations in Russia and China) will almost certainly be a matter of debate among area specialists and intelligence analysts. However, it is virtually impossible to create meaningful lists of signposts that are easily quantifiable, and therefore we must accept some limitations in our ability to assess the more qualitative signposts.

Scenario

A scenario in which Indonesia attacks the Malaysian portion of Borneo with the aim of annexing much of Malaysia's territory on the island is the one we selected as an illustrative case for the U.S. Unipolarity world. The aggressive Indonesia scenario appeared more challenging for the 2025 U.S. Army than did the Iran scenario, for three main reasons. First, the distances from major U.S. basing areas to Southeast Asia are assumed to be much greater than from major U.S. bases to the Persian Gulf region. Indeed, in our U.S. Unipolarity world we assumed that the United States retained access to a rich network of bases in Iraq and the small Gulf emirates in 2025. By contrast, virtually all of the U.S. Army forces being deployed to defend Malaysia would be coming straight from the continental United States (CONUS). This creates a much larger mobility challenge than does the Southwest Asia scenario. The lack of ready infrastructure in Southeast Asia that is posited in our scenario also presents a tremendous sustainment problem for Army logistics commanders after the first American shock units enter combat. Second, the terrain on Borneo is much harsher to operate in—at least from the perspective of the high-tech Future Force units of 2025. The jungles and swamps of Borneo would hamper the effective use of advanced sensors and targeting systems much more than would the open desert terrain of the

Persian Gulf region. Third, the nature of the adversary would be more menacing in Southeast Asia. The Indonesian threat we have posited is made up largely of masses of light infantry who have trained extensively in jungle warfare and are backed up by packets of armor and artillery. The Iranian threat in Southwest Asia would consist mainly of traditional armored and amphibious forces who could be easily identified and targeted by even legacy intelligence, surveillance, and reconnaissance (ISR) systems possessed by American forces. Both Iran and Indonesia were assumed to have roughly equivalent cruise and ballistic missile capabilities.

In terms of the working details of the "Indonesian land grab" scenario, we assumed that the Indonesians would attack with 5-7 light infantry divisions backed up by 3-4 mechanized brigade task forces designed to exploit any breakthroughs that might be created. Both the United States and Malaysia have 48 hours warning of an attack, and U.S. Army forces are assumed to mobilize immediately at the outset of this warning period. The Malaysians are assumed to have 3-4 infantry divisions defending their slice of Borneo as well as 2 light armored brigades. The quality of Malaysian forces is set at about 75 percent that of Indonesian forces. Indonesia is able to gain immediate air superiority over Borneo because of its covert deployment of several advanced SA-10 surface-to-air missile (SAM) batteries on the island. These batteries work in close concert with small numbers of advanced Russian-made interceptor aircraft (MiG-29s, -31s, and SU-34s) that conduct periodic offensive sweeps over Borneo and adjacent waters. The Malaysian air force, which is largely made up of aging F-16 and F/A-18 model aircraft, focuses on the defensive counterair mission over peninsular Malaysia.

In addition to the close combat operations on the Borneo front lines, the Indonesian military also mounts a deep strike campaign with two apparent objectives: (1) to coerce the Malaysian government into suing for peace with territorial concessions, and (2) to degrade the aerial point of debarkation (APOD) and seaport of debarkation (SPOD) infrastructure that the U.S. Army would need in order to make an effective forced entry into the region. To achieve these ends, Jakarta employs ballistic and cruise missile strikes against key Malay-

sian government buildings and installations around Kuala Lumpur and also uses these weapons to attack major port and air bases on Borneo. Although the Indonesians do have some chemical warheads for their theater missiles, we assumed here that they employ only conventional warheads in their initial attacks against facilities that the United States would likely need to secure a foothold on Borneo.

In this campaign, the high-level U.S. politico-military objectives would be to halt and then reverse the Indonesian advance, restore the territorial integrity of Malaysia, and ensure the continuing viability of the existing friendly regime in Kuala Lumpur. A secondary objective would be to deal a strong enough blow to the Indonesian military so that middle-ranking officers (some of whom are "closet secularists") will launch a coup to overthrow the Islamist junta and return the former democratic regime to power. The next chapter will detail the implications these high-level objectives would have for Army operational planners.

Democratic Peace

Democratic Peace is clearly an idealistic vision of the future. Its premise is simple. Democratic Peace holds that liberal democracy and free, open markets have spread to such an extent that they are becoming institutionalized in all of the world's great powers (Europe, India, China, Japan, Russia, Brazil) as well as most middle-ranking powers. Thus, in 2025, liberal democracy is excluded only from some scattered pockets of territory made up of the poorest developing nations. Large interstate wars are not a realistic possibility in this kind of international system.³ Drastic conventional and nuclear arms control agreements have been signed by the great powers, making it very difficult for any nation to execute a large conventional offensive against one of its neighbors without significant warning time. Strategic nu-

³ The argument that liberal democracies do not fight one another is found in what is often called the liberal theory of international relations. One work that reviews this theory is A. Geoffrey Blainey, *The Causes of War*, New York: Free Press, 1973, pp. 18–32.

clear force structures have been pared down to the bare minimums required for deterrence, and all the nuclear powers have agreed to keep their warheads physically separated from their delivery systems, thus making the risk of a "bolt from the blue" nuclear attack anywhere in the world miniscule.

Spreading democracy has virtually eliminated the phenomenon of "rogue regional states" in this vision of the 2025 future, and thus proliferation of WMD is not a major security issue for American leaders in Democratic Peace. Most regional powers have made major reductions in their conventional arsenals and especially have cut back on their nascent power projection capabilities.

In Democratic Peace, the United States does not enjoy the same level of relative power as it did in our first future, U.S. Unipolarity. Although it is still clearly the first among equals, America's relative power advantage is smaller because the spread of free markets and privatization is making all of the great power economies very competitive with American goods and services on world markets. The Russian and Chinese economies are growing at a faster rate than that of the United States, and the EU is becoming an economic bloc that can rival it in global financial markets as the euro becomes more accepted as an international reserve currency. Democratic Peace represents a future in which the military threats to American interests are small, but in which economic competition between the other great powers and the United States is becoming more heated.

International political and diplomatic cooperation among the great industrial powers is extensive in Democratic Peace. Most major decisions about transnational issues are reached and enforced by a Concert of Powers made up of the United States, EU, Japan, Russia, China, India, and Brazil. Since this Concert of Powers often operates through the mechanism of the UN, the UN is becoming increasingly important as an umbrella body for coordinating peacekeeping and peacemaking missions in the remaining "hot spots" of the world. Multinational military missions are ever more frequent as the great powers come to resemble a "posse" that coalesces to marshal a military response whenever mass disorder breaks out in the nondemocratic parts of the developing world.

In specific terms, the key zones of instability in the Democratic Peace world we envision here for 2025 are northern Latin America, Sub-Saharan Africa, and parts of South Asia (Pakistan and Bangladesh). These are the areas in which U.S. Army intervention would be most likely. In northern Latin America, the principal security concern is assumed to be the corrupting political influence of drug traffickers upon the regimes of Colombia, Bolivia, and Peru.

Sub-Saharan Africa faces a variety of security problems in this future. Ethnic conflict between Hutus and Tutsis continues to flare in the Great Lakes region, as a minority Tutsi regime struggles to survive in Rwanda. In West Africa the problem is warlordism, as successive regimes in Liberia, Sierra Leone, and the Ivory Coast prove unable to exert control over rural areas. Large semi-sovereign warlord fiefdoms have emerged in these states, supported by undisciplined groups of youthful mercenaries who often pillage the countryside and commit atrocities against local civilians. Both areas are prone to sudden mass movements of refugees when the level of violence crosses a certain threshold. Furthermore, the ongoing deterioration of local farmlands due to soil depletion and erosion is lowering crop yields to the point where continuous foreign agricultural shipments are required in order to avert outbreaks of famine.

While India is assumed to have developed into a growing, increasingly prosperous democracy in this world, Pakistan and Bangladesh are posited to have slid into turmoil—both political and economic. These two nations are crippled by unrestrained population growth and unchecked religious and ethnic rivalries. To make matters worse, organized criminal elements have gained a solid foothold in the major cities of both countries and are strangling local commerce as well as fighting violent turf wars. The poor level of organization of these South Asian organized criminal militias and ethnic gangs makes it possible for the governments of Pakistan and Bangladesh to maintain some semblance of order for much of the time, but waves of violent crime and communal conflict wrack the major cities of these states at least once or twice a year. Both states maintain rigid authoritarian political systems and, if anything, appear to be moving further away from democracy as time goes by. The Pakistani government, in

fact, is assumed to have implemented martial law on a permanent basis.

Signposts

The following six signposts would be used by the 2010 Army intelligence officer to determine if Democratic Peace is a plausible future for the Army to prepare for:

Economic

- Effective free market systems and electoral processes are in place in Russia and China.
- Trade barriers are being reduced steadily across the board in every industrialized region.

Military

- Drastic global declines are observed in the size of heavy ground forces and high-performance air forces.

International

- Broad-based political cooperation between West and Russia/China.
- Decline of Islamic fundamentalism.
- Rogue states of the 1990s are disarming and opening up to the West.

Scenario

Our planning scenario for Democratic Peace is a U.S. Army-led multinational cease-fire enforcement mission into the city of Bogotá, Colombia.⁴ The mission was precipitated by an outbreak of brutal urban fighting between two rival drug cartels: the new-generation Medellín cartel and the up-and-coming Cartagena cartel. Large drug cartels were largely destroyed in the 1990s in Colombia and replaced

⁴ For a review of the contemporary political situation in Colombia, see Angel Rabasa and Peter Chalk, *Colombian Labyrinth: The Synergy of Drugs and Insurgency and Its Implications for Regional Stability*, Santa Monica, CA: RAND Corporation, MR-1339-AF, 2001, and Roman D. Ortiz, "Insurgent Strategies in the Post-Cold War: The Case of the Revolutionary Armed Forces of Colombia," *Studies in Conflict & Terrorism*, Vol. 25, 2002, pp. 127-143.

by small narco-mafias allied with guerrilla and/or paramilitary formations like the FARC and Autodefensas Unidas de Colombia (AUC). However, after the successful U.S.-supported government counterinsurgency campaign against the FARC in 2000–2010, the coca-growing infrastructure in Colombia was destroyed. The remaining Colombian narcotraffickers had to establish coca fields in other Latin American countries like Bolivia and Peru, build processing labs in remote areas of the Amazon basin, and forge a network of new transit routes through Mexico, the Caribbean, and Africa to ship cocaine to Europe and the United States. To manage and protect this far-flung empire without FARC protection, most of the remaining narcotraffickers pooled their resources to buy private armies and dispense bribes to local officials. Eventually, this wave of consolidation produced the two main cartels mentioned above.

Unfortunately, in the 15 years between the destruction of the FARC and the onset of this scenario, U.S. aid and training for the Colombian armed forces evaporated as Washington turned its attention away from Latin America and toward the democratic transition in Asia and the Middle East. Consequently, the Colombian military experienced a drastic decline in military capability relative to the emergent new cartels. Similar military atrophy took place in all Latin American states during this period, rendering Latin American governments incapable of meeting the security challenge posed by the new cartels without U.S. intervention.

Each cartel has a “private army” at its disposal, made up of two tiers of forces. The first tier consists of hardened professional mercenary units (recruited from throughout Latin America) that are equipped with modern small arms, light/medium/heavy caliber mortars, portable anti-tank missiles, armored cars, portable heat-seeking anti-aircraft missiles, night-vision equipment, frequency-hopping radios, and reasonably sophisticated signal intelligence (SIGINT) equipment (much of it purchased from corrupt military officers in Europe and Asia). A second tier of ragtag militia units recruited from the urban poor of Bogotá round out the force structure of each cartel. These militia groups have previous-generation automatic weapons and a smattering of RPG (rocket-propelled grenade) launchers. They

operate against the enemy with crude swarming tactics that are triggered by the use of couriers; indeed, these militia have a *modus operandi* that is strikingly similar to that of the Aided militia in Somalia in 1993.⁵ In this particular case, the Colombian government and military are assumed to have become so weakened that they are incapable of putting up any significant resistance to the drug cartels. Indeed, in the months before the outbreak of street fighting, many senior-level Colombian military officers resigned from their posts to join the cartels and receive an order-of-magnitude (or more) pay increase.

This particular challenge for the 2025 U.S. Army was deemed to be the most demanding in the Democratic Peace world because, in that world, drug cartels like those in Colombia would have the financial resources to buy military capabilities far superior to those found in other potential adversaries, such as warlord-led militias in West Africa. The potential level of technological threat to U.S. forces would probably be greatest in the kind of situation represented by the Bogotá scenario.

Our scenario assumes that several weeks of fierce fighting between the Medellín and Cartagena cartels causes such heavy civilian casualties that the international community steps in with a major diplomatic push to reach a cease-fire and restrict the freedom of activity of the cartels' military wings. After the UN brokers a cease-fire that compels the rival cartel armies to move into opposite ends of the city and place their heavy weapons into warehouses that are supervised by international monitors, the U.S. Army leads a multinational cease-fire enforcement force into Bogotá, called the Colombia Stabilization Force, or COLS. The force is deployed under the political auspices of the Organization of American States (OAS) but has a U.S. Army commander and draws on U.S. Southern Command's (SOUTHCOM's) logistics network. COLS includes Argentine, Chilean, and Mexican troops in addition to the American contingent and

⁵ A good tactical history of the combat between U.S. Army Rangers and the Aided militia is found in Mark Bowden, *Black Hawk Down: A Story of Modern War*, New York: Atlantic Monthly Press, 1999.

receives strong political support from the EU, China, and Russia. COLS has two missions to execute. First and foremost, it is charged with the enforcement of the cease-fire. This requires that the demarcation zone between the different cartel-controlled areas of Bogotá be vigorously patrolled on a 24-hour basis and also demands that COLS soldiers conduct frequent inspections of various cartel strongpoints to make sure that no heavy weapons have been stolen from the internationally supervised warehouses. Second, in the event that any significant fighting occurs, COLS is authorized by the OAS to militarily defeat and dismember the cartel armies with whatever level of force is necessary. COLS troops are authorized to make arrests of any cartel leaders thought to be plotting to violate the cease-fire.

COLS is not formally responsible for humanitarian relief operations in Bogotá in the wake of the fighting. These will be handled by a variety of well-funded NGOs. Nevertheless, in certain situations, COLS troops will be required to provide security for relief workers. The thorniest political issue here is obviously that of laying out an exit strategy for COLS that leaves Colombia in some semblance of order. Thus, after an initial period where the emphasis will be purely on cease-fire enforcement, it is entirely possible that U.S. Army troops will find themselves helping to train a new, uncorrupted Colombian national police force that will be strong enough to put down any renewed cartel violence after the departure of the COLS forces.

Major Competitor Rising

Major Competitor Rising is the first of the two medium-good worlds posited in this study. It portrays the emergence of a near-peer competitor to the United States, a competitor with significant conventional and strategic nuclear capabilities including a power projection force and dedicated military space assets. In intellectual terms, this near-peer competitor would be sophisticated enough to generate operational and organizational concepts that leverage off of the ongoing RMA. It is important to note that this near-peer competitor need not be a single state, but could instead be a bloc of two states pooling

their resources. Indeed, this study's version of a near-peer competitor is a two-state entente that wishes to challenge the United States in several key regions simultaneously.

Specifically, the Major Competitor Rising world holds that a Sino-Russian Entente forms in 2015–2018 with the goal of weakening America's global position as well as that of its key allies.⁶ Both nations have experienced an economic rejuvenation, and their leaders now feel they must work jointly to gain their newly deserved "place in the sun" as budding superpowers. This entente maintains a modern force of mobile, land-based, single-warhead intercontinental ballistic missiles (ICBMs) as a strategic deterrent to the United States. Sixty percent of this force is under Russian operational control, and the remainder is commanded by Beijing. The entente also maintains a jointly manned strategic warning system featuring a constellation of four state-of-the-art infrared *Sunrise* early warning satellites (initial operating capability [IOC] in 2020). The Russians begin deploying a rudimentary strategic missile defense system to cover the far western parts of their nation in 2020. This system relies on ground-based kinetic kill interceptors and is not seen to pose much threat to the penetration capabilities of the newly deployed American land-mobile *Warrior* ICBMs (IOC 2019).

China has focused its conventional modernization program on naval and air forces, hoping to create a maritime belt of dominance from Okinawa in the north through the Philippines and down to Singapore in the south. Chinese ambitions are helped by the fact that the U.S. Pacific Fleet is reduced in size in 2015–2020 in order to free up funds to pay for Washington's ambitious strategic nuclear modernization program, which was begun in 2015 as soon as the Sino-Russian friendship treaty was signed. Taiwan's peaceful reincorpora-

⁶ The recent literature on China's politico-military development includes the following: U.S. Department of Defense, *Annual Report on the Military Power of the People's Republic of China*, Report to Congress Pursuant to the FY2000 National Defense Authorization Act, 2002; Zalmay Khalilzad et al., *The United States and a Rising China: Strategic and Military Implications*, Santa Monica, CA: RAND Corporation, MR-1082-AF, 1999; and Zalmay Khalilzad et al., *The United States and Asia: Toward a New U.S. Strategy and Force Posture*, Santa Monica, CA: RAND Corporation, MR-1315-AF, 2001.

tion into the People's Republic of China (PRC) in 2018 only serves to further intensify Beijing's maritime ambitions in East Asia. China's conventional modernization program includes the deployment of the new type 093 nuclear attack submarine class, the purchase of additional Sovremenny-class guided missile destroyers from Russia, the deployment of two models of advanced sea-skimming anti-ship missiles, and the purchase of a variety of advanced sea mines from European firms. The Chinese air force ("People's Liberation Army Air Force," or PLAAF), meanwhile, has acquired a force of 100 moderately capable aerial refueling tankers as well as 250 new Su-27s and 250 Su-30MK tactical attack aircraft equipped with laser and television (TV)-guided bombs. The PRC has also bolstered its stock of M-9 and M-11 short-range ballistic missiles to a total of around 700. Some of these are now equipped with GPS guidance, which reduces their circular error probable (CEP) considerably.

In addition, aggressive Chinese diplomacy in 2015–2018 has resulted in Chinese air and naval bases being constructed on Luzon in the Philippines, as the Manila government decides to throw in its lot with Beijing. Finally, Beijing is embarking on a drive to build a stronger amphibious assault capability around a force of three well-trained naval infantry brigades.

Russia, on the other hand, is concentrating on modernizing its ground forces and specific parts of its tactical air forces. The Russian navy is allowed to atrophy. The core of Russia's modernized ground forces is a group of four "strike corps" of three armored divisions, each of which are completely digitized and linked to a space-based battlefield C4ISR system. While these strike corps are equipped mainly with previous-generation armor (T-72s and T-80s), these tanks have been upgunned and fitted with new reactive armor. Furthermore, the Russians have been able to produce a new operational concept for armored war that emphasizes close cooperation with precision-guided munition (PGM) capable rocket artillery systems. As such, each strike corps contains an organic rocket artillery brigade. Russia's air force has created an elite expeditionary branch equipped with 2–3 wing equivalents of Su-27s, Su-30s, and MiG-31s to support the strike corps. Fifty percent of the attack aircraft in the expedi-

tionary branch carry laser-guided ordnance. The remainder of the Russian air force is grouped into air defense wings made up of older, less-capable aircraft that fly only sporadically. Russia's long-range bomber force has largely atrophied, but some of the Backfire and Bear bombers have received new sensor suites and airframe upgrades. Pilot training outside the elite air units is still relatively poor in quality compared to that seen in Western air forces.

In the 2020–2025 period, geopolitical developments cause the Sino-Russian Entente to look toward South and Southeastern Europe as the key areas of opportunity vis-à-vis the United States. A number of setbacks for Beijing in East Asia cause the entente leadership to conclude that its position in that area is eroding badly and cannot be restored in the near future. First, in 2021, a newly elected president of the Philippines orders the Chinese to close down and abandon their new naval and air bases on Luzon. Second, Japan and the United States sign a new treaty of defense cooperation in 2022 that permits the United States to increase the number of forces it can forward deploy in Japan. Third, a Chinese-backed insurgent group in Thailand, which seeks to replace the current regime with one friendlier to Beijing's regional ambitions, is crushed in 2023 during a series of well-executed offensives by Thai army units aided by a large complement of U.S. Army advisors.

In late 2023, the leadership of the entente decides to shift the strategic focus of its anti-American and anti-Western campaign to South/Southeastern Europe. The objective is to use Russian military power to overwhelm NATO's most important out-of-area commitments and thus cripple the alliance politically to a point where the Europeans may abandon the United States and seek their own independent accommodation with the entente. Chinese money, technology, and political support will be contributed to help the Russian military offensives, but no Chinese forces will be committed. Moscow determines that it will strike simultaneously in two strategic directions. First, it will use its strike corps to try to overrun the pro-American nations of the Caspian Basin region (Armenia, Azerbaijan, and Georgia). In addition to hurting NATO politically, this action would give Moscow control over a significant slice of the world's

2025 oil reserves.⁷ Second, the Russian army would dispatch some elite light infantry brigades to help the firmly pro-Russian Serb regime in Belgrade launch an offensive to take control of all of Bosnia, which in the early 2020s is a de facto protectorate of Croatia, whose army is now defending Bosnia against Serbia with the full political support of the United States and its NATO European allies. Croatia's army is quite capable (it has large quantities of American-made armor and artillery) and is not expected to be a pushover for the Russian-Serb forces. Entente leaders feel certain that a successful seizure of Bosnia will compel the Croats to tilt away from Washington and toward Moscow in order to ensure their own future national survival.

Russia is physically able to move its forces into Serbia because it has made some major political gains in Southeastern Europe in 2018–2023. Ukraine and Romania have been coerced into becoming pliant allies of Moscow and now allow the permanent basing of Russian military units on their soil. NATO expansion has been halted and even reversed in some places after the 2005 admission of the Baltic states and Romania, Bulgaria, Slovenia, and Slovakia because of crafty Russian diplomacy, and Moscow has been working successfully to build a new ring of puppet states around its western periphery. Thus far, in addition to Ukraine and Romania, Belarus, Serbia, and Moldova fall into this category. The Baltic NATO members continue to resist Russian pressure with open assistance from the United States and the larger West European NATO states. The entente plans its major moves in Europe for the spring of 2025.

Signposts

There are six signposts warning of the coming of a Major Competitor Rising world:

⁷ An analysis of the size of possible petroleum reserves in the Caspian region is found in Sergei Makhnovski, "Sources of Conflict in the South Caucasus and Central Asia," unpublished draft, Santa Monica, CA: RAND Corporation, March 2001, pp. 30–37.

Economic

- Single power or bloc begins to approach U.S. levels of defense spending.

Military

- Single power or bloc begins to develop and test ISR architectures with the same capability as America's.
- Single power or bloc starting to produce intertheater power projection capabilities.
- Strategic nuclear arms control regime is weakening.

International

- Emergence of the outlines of bipolarity.
- The United States begins to perceive certain regions as newly "off limits" to U.S. military deployments.

Scenario

Russia plans to throw all four of its strike corps against the NATO position in the Caspian region, along with most of its expeditionary tactical air power. The goal is to conquer Azerbaijan, Armenia, and Georgia in 14–20 days through the exploitation of the new armored operational concept produced by the Russian General Staff. The U.S. Army and the U.S. Air Force have significant forces forward deployed in the Caspian region, since Washington has come to regard it as even more important than the Persian Gulf to its strategic position in the world. The armies of the three local states are very weak and disorganized, thus not adding much to American capabilities. However, one high-quality British armored division and a light French armored division stand side by side with the U.S. forces. Both the UK and France also have deployed a squadron each of advanced European Fighter Aircraft (EFAs) to the Caspian region. The United States has access to air bases in Turkey, but the Turks do not send any forces to the Caspian theater. It should be noted that in this scenario, the Army should be able to leverage heavily off of Air Force capabilities. We assume that the 2025 Air Force will have a large number of Joint Strike Fighters (JSFs) carrying brilliant munitions escorted by F-22s. This type of capability is tailor made for the kind of armor/artillery

threat posed by our notional Russian strike corps. Certainly, one of the keys to any American victory in this scenario would be the Air Force's ability to suppress Russian air defenses early in the conflict so that it can quickly shift focus to the battlefield air interdiction mission against the Russian strike corps. The quicker that the suppression of enemy air defense (SEAD) battle is won, the more likely the overall Russian offensive is to fail.

In the Balkans, the United States does not have any forces forward deployed to support the Croats in Bosnia, preferring to help them with training and equipment instead. However, as evidence mounts that Russian light infantry brigades are arriving in Serbia to bolster the Serb national army, the Pentagon prepares plans to send two U.S. Army divisions into Bosnia to fight alongside the Croats. These divisions are kept at high readiness at their bases in Slovenia as the European situation deteriorates day by day in early 2025.

American objectives in the Caspian theater are to preserve the territorial integrity of the friendly local states, degrade the capability of the Russian strike corps and their accompanying expeditionary tactical air units, and damage/degrade the transportation infrastructure in southern Russia that supports the Russian invasion. No ground offensive into Russian territory is planned. In the secondary theater of the Balkans, the U.S. objectives are to preserve the territorial integrity of Bosnia, maintain the cohesiveness of the Croatian army, degrade the strength of the Russo-Serb attacking force, and destabilize the Belgrade regime. In this secondary theater, offensive operations into Serbia are planned if the initial Russo-Serb thrust can be stopped.

This Caspian/Balkan scenario was selected because it would be a more demanding test for the Army in this near-peer competitor world than would any air/maritime contingency in East Asia. Our scenario forces the Army to fight in two theaters at once against a numerous foe with significant power projection capability. One of the theaters is at the end of a long and tenuous logistics tether from the main American bases in Germany. Perhaps most important, neither theater offers much strategic depth to the U.S. Army, thereby closing off the option of trading lots of space for time during actual combat. A sce-

nario such as this would most likely strain the 2025 Army significantly.

Competitive Multipolarity

Competitive Multipolarity is our second medium-good world. In this future, we would see the emergence of two large powers that are capable of challenging the United States on roughly equal terms. Each of these near-peer level powers would attempt to build its own coalition of friends and allies at the expense of the other two. Here, instead of witnessing large-scale warfare in a couple of key theaters, as we saw in the previous world, we would see an ongoing competition between fluid defensive alliance systems, with a mix of carrots and sticks being offered to critical small powers in order to attempt to persuade them to either shift or maintain their present political alignment. In essence, this world has rules similar to those of the Bismarckian era of power politics in late 19th century Europe.

Specifically, 2025 Competitive Multipolarity would have three dominant alliance systems. The first, dubbed the "Rimland Alliance," is led by the United States, with the UK and Japan as senior partners. NATO is defunct in this world, but the Rimland Alliance is still supported by most of the major nations of Western Europe. Germany, Belgium, the Netherlands, Italy, and Spain are all aligned with the U.S.-led grouping. The Rimland Alliance also has some friends in Central Europe (Poland, the Czech Republic, and Slovenia). Most of Latin America and the Caribbean is part of the Rimland system, the exceptions being the major drug producers Colombia and Bolivia, which are tilting toward the Russian-led alliance grouping that will be described below. In East Asia and the Pacific, the unified Korean nation is a Rimland member, as are Thailand, Australia, New Zealand, and the Philippines. In South/Central Asia, Pakistan is the only significant Rimland supporter. The Middle East/Persian Gulf region has been heavily penetrated by America's rivals to the extent that only Israel, Egypt, and Turkey are confirmed friends. Sub-Saharan Africa

is another hotly contested zone of competition where Washington's most reliable ally is South Africa.

The second alliance system in this world is called the "Central Powers" and is led by Russia. India and Libya are senior partners in this grouping. The Central Powers have been concentrating their efforts on expanding their power in East Central Europe and Sub-Saharan Africa. Moscow has taken the lead in East Europe, while the Libyans have been assigned to build a sphere of influence for the Central Powers in Sub-Saharan Africa. Russia has been able to draw Ukraine, Belarus, and Serbia into its orbit. Romania and Bulgaria are tilting in the direction of the Central Powers but are still officially neutral.

In Africa, the Libyans have been working hard since 2022 to bring the resource-rich and civil war-wracked Democratic Republic (DR) of the Congo into the Central Powers system. To that end, the Libyans have fashioned a belt of client states in the area to the north of DR Congo (Chad, Cameroon, Central African Republic, Gabon) and have deployed several parachute and light infantry regiments into some of these states to prop up friendly local rulers. The Libyans are also actively aiding one of the three main factions in the long-running DR Congo civil war, the United Front for the Liberation of Congo (UFLC), which is based mainly among the ethnic groups of the north of that country. In 2024, the Libyans scored some successes in the Great Lakes region, which had previously been dominated by pro-American regimes. Pro-Libyan military officers staged successful coups in both Rwanda and Burundi in that year, driving the Tutsi-dominated regimes in those countries from power and eliminating American influence from that part of Africa. Libya's main security concern in Sub-Saharan Africa now is the specter of an organized U.S.–South African effort to turn the tide in the DR Congo civil war against the pro-Libyan faction. Already the South African military has moved several crack paratrooper battalions into Zambia with the help of the U.S. Air Force's Air Mobility Command.

India, the third major force in the Central Powers grouping, is heavily preoccupied with facing off against Pakistan in an escalating nuclear arms race and also is struggling to preserve the internal unity

of the Indian state. In 2021, a large-scale rebellion against the central government broke out in the state of Uttar Pradesh among impoverished agricultural workers. Rebellion against the perceived incompetence and corruption of the Delhi elites soon spread to Punjab and Assam as well. The central government was able to prevail in the resulting ten-month civil war, but only at a frightful cost in lives and property. Although India was significantly weakened by this internal breakdown, it continued to modernize its conventional force structure and by 2025 came to possess ten fully modern mechanized divisions, a three-division rapid reaction force of airborne infantry, and thirteen squadrons of frontline Russian-made fighter aircraft. In early 2025, Delhi begins to come out of its post-civil war isolationism when its leaders start to worry about American efforts to bring the newly democratic Burma into the Rimland Alliance. The Indian army's rapid reaction force moves into the western provinces of Burma shortly thereafter in support of a dissident group of Burmese generals opposed to their nation's tilt toward the United States.

At the end of 2024, the Central Powers begin to exert their influence in the Middle East as the government of Syria formally declares itself to be a member of the Central Powers network. The Russians promptly deploy several batteries of their new SA-20 long-range SAMs to Syria as a shield against any future Turkish or Israeli air strikes.

Finally, the third major alliance group is led by China and has Iran and Saudi Arabia as its senior partners. This bloc is called the "New Solidarity Alliance." Saudi Arabia experienced a fundamentalist revolution in 2017 that overthrew the royal family and replaced it with a radical Sunni theocracy that has made a grudging peace with Iran and removed the U.S. presence from Saudi territory. Following the Saudi revolution, most of the small Gulf states faced similar rebellions. Surprisingly, all were able to defeat the insurgents and remained nonfundamentalist in outlook. Despite heavy pressure from both Riyadh and Tehran, the Gulf states continue to maintain cordial relations with the United States but do not host U.S. military forces any longer. The result of all this has been an increase in world oil

prices and the commencement of a desperate search on the part of the United States and its allies for alternative energy sources.

The New Solidarity Alliance finds much of its strength in the Islamic world. In East Asia, Indonesia is the major junior partner in this bloc, while in Central Asia, several of the former Central Asian Soviet republics are members. New Solidarity has some scattered support in the Horn of Africa, where Somalia and Eritrea have drawn on Chinese weapons and advisers to support their low-intensity border conflicts with nonaligned Ethiopia. China holds the New Solidarity bloc together with generous exports of ballistic missiles, cruise missiles, tanks, fighter aircraft, and small arms to member states. By 2025, however, strains are being detected in this alliance, as the Islamic members are beginning to chafe at having to depend so heavily on the pseudo-Marxist regime in Beijing for material and organizational support as well as a modest nuclear umbrella to deter the Americans and Russians. Some of the more militant members of this bloc (e.g., the Islamic Purity regime in Tajikistan) are now lobbying quietly for a long-term strategy of separation from the PRC. China is also tiring of having to cooperate with its Islamic alliance partners, but its relatively weak strategic position in Northeast and Southeast Asia (where the Rimland Alliance is dominant) forces it to look toward Southwest and Central Asia to find any hope of expanding its sphere of influence.

Signposts

Economic

- The U.S. economy is lagging behind other large states in productivity and GNP growth.

Military

- More than one other state is independently developing advanced ISR and power projection capabilities.
- The size of heavy ground forces and advanced air forces around the globe is growing steadily.
- Heavy WMD proliferation.

International

- A few key U.S. partners turn decisively against us (e.g., Saudi Arabia turns fundamentalist, India signs mutual defense pact with Russia).

Scenario

In the summer of 2025, the American leadership finds itself facing three crisis points in widely separated areas of the world: Iraq, DR Congo, and Burma. A decision needs to be made as to which of the three is most important to American and Rimland interests.

Iraq in 2025 is finally beginning to unravel along ethnic/religious lines. The post-Baathist government in Baghdad (which has been neutral up until now) is watching helplessly as the country fragments into Kurdish, Sunni, and Shia autonomous zones. Regional political bosses have usurped much of the central government's power and no longer send any tax revenue to Baghdad. The Central Intelligence Agency (CIA) estimates that Iraq as a unitary state will dissolve in 3–4 months. In view of the current high price of oil, the other two alliances are already jockeying for political dominance in the territory of the former Iraq. Whoever wins political dominance there will enjoy assured access to that country's still-abundant oil reserves. The Central Powers are moving aggressively to exploit the situation, as Syria is starting to mass forces along its frontier with Iraq. The New Solidarity Alliance is also making some early probes here, as there are reports that Iranian intelligence is drawing on Swiss bank accounts controlled by the Chinese Defense Ministry to offer huge bribes to Shiite political bosses in southern Iraq. Furthermore, several crack Revolutionary Guard divisions are scheduled to conduct exercises in the border area near Basra during the next 60 days.

The U.S. State Department is very worried about the situation in DR Congo, as there is fresh evidence that the pro-Libyan UFLC faction is poised to drive toward the capital of Kinshasa in the early autumn. Kinshasa is currently held by the pro-American Congo Democratic Party (CDP), but the CDP is now militarily inferior to the UFLC in the wake of Libya's transfers of large shipments of attack helicopters, heavy artillery, and armored personnel carriers to the

UFLC. South Africa's president has appealed for the White House to give him a green light to move his paratrooper battalions into Kinshasa to defend the city against the UFLC. He also has requested American tactical air support for this operation.

Finally, the Indian presence in Burma is solidifying, and there are rumors that Indian military intelligence is plotting to support a full-blown Burmese army coup against the pro-Rimland Burmese prime minister. The Chief of Naval Operations has appealed to the President to focus on this theater because the U.S. Navy has recently announced plans to build a huge new naval base in Burma to support an expanded presence in the Indian Ocean.

After consultations with London and Tokyo, the President announces that projecting Rimland influence in Iraq will be the alliance's top priority in the coming year. He asks the Joint Chiefs to prepare a plan to deploy a large U.S. Army force into the former Iraq to stabilize the entire area and prevent either of the other two alliances from obtaining a foothold. This operation (codenamed FAST HAMMER) is officially a deterrent operation aimed at forestalling any Syrian or Iranian moves into Iraq. However, the deploying Army divisions are directed to be prepared for combat in the event of either Syrian or Iranian intervention. Iran's possession of 10-12 nuclear warheads for its Shahab 3 and 4 theater-range ballistic missiles is a major worry here. FAST HAMMER is to be preceded by covert efforts to sway several of Iraq's new regional bosses over to the Rimland side. Early indications are that this will not be difficult, provided these new power brokers believe the United States has the capability to defeat the Syrians and/or Iranians.

The Rimland force will set up staging areas in southeastern Turkey. The first phase of the operation will consist of a set of heliborne leapfrog operations establishing Rimland control over all the major cities in Iraq. Phase 2 would be a more systematic and sequential ground operation in which fast, mobile units would drive through the Kurdish north, then on into the heart of the Tigris-Euphrates Valley, and finally on toward Basra. Senior U.S. officers plan to execute Phase 2 with tremendous speed and use the Soviets' August 1945 offensive into Manchuria as a template for Phase 2 of FAST

HAMMER. Both Britain and Japan contribute forces to support FAST HAMMER. The British deploy two elite Royal Marine Commando regiments to assist in Phase 1 of the operation as well as two squadrons of Super Tornado ground attack aircraft. Japan sends one armored division on U.S. sealift ships to the theater to help in Phase 2.

The Syrian threat is assessed at being two large armored corps made up of previous-generation Russian-made tanks and infantry fighting vehicles. Syrian air support for this force will be poor, but Washington cannot dismiss the possibility that the Russians may send several of their own squadrons to support any Syrian ground push into western Iraq. The Iranian threat is assessed to be made up of five Revolutionary Guard mobile attack task forces; these units have few tanks, instead relying on a mix of jeeps, trucks, and armored cars carrying an arsenal of long-range (up to 200 km), medium-range, and short-range smart Chinese-made anti-armor missiles. Pentagon planners are far more worried about the Iranian threat than the Syrian in this scenario.

Transnational Web

Transnational Web is our medium-bad world and represents a more unorthodox view of the 2025 future in that it posits a situation in which the nation-state has lost a substantial amount of power to transnational actors, many of whom use the burgeoning Internet to coordinate their actions worldwide much more rapidly than could any national government bureaucracy.⁸ It is assumed here that a substantial amount of nation-state power has been usurped upward by transnational, globally distributed actors such as multinational corporations, transnational criminal organizations (TCOs), terrorist net-

⁸ Recent RAND research has already sketched the basic outlines of this kind of world. See John Arquilla and David Ronfeldt, *The Advent of Netwar*, Santa Monica, CA: RAND Corporation, MR-789-OSD, 1996; and David Ronfeldt et al., *The Zapatista Social Netwar in Mexico*, Santa Monica, CA: RAND Corporation, MR-994-A, 1998.

works, special interest "peace and social justice" groups, and perhaps even ethnic diasporas. Many, if not most, of these actors have benign intentions in this world and pose no threat to American security interests. However, we posit here that a handful of these newly empowered groups do come to be hostile to the United States and other Western nation-states, and that military strategies for countering them become necessary.

In this hypothetical future, the period from 2020 to 2025 witnesses a dramatic growth in the threat to the United States presented by radical transnational "peace and social justice" groups. Using the goal of creating a just "global civil society" as their rallying cry, large militant transnational actors appear, promoting radical agendas for the environment, nuclear disarmament, and Third World land reform. Almost all of these groups come to identify the United States as an arch-villain that stands in the way of their drive to reshape the global order. By 2025, however, one group in particular stands out as a threat from the perspective of the U.S. intelligence community. It is the World Environmental League (WEL), which is spearheading a crusade to compel the UN General Assembly to approve a radical treaty for fossil fuel emissions reduction that would cripple many American and Western manufacturing industries and almost certainly spark a global recession. To push the proposed treaty, WEL spokesmen cite large amounts of scientific evidence indicating that global climate change is accelerating. However, there is an equally large amount of scientific evidence suggesting that climate change is not occurring, and this convinces the U.S. government that the treaty must not be approved.

The WEL is a leaderless, networked organization that exists as a multitude of quasi-independent cells or "franchises" in at least 80 countries around the world. The WEL appears to have at least 15,000 members worldwide, with especially heavy concentrations of members in Western Europe and Southeast Asia. Most disturbing of all to the CIA is the fact that several WEL chapters appear to have organized covert action teams designed specifically to carry out terrorist attacks against the interests of certain multinational companies and nation-states. These teams have considerable expertise in explosives

technology and information warfare. Communication between WEL cells takes place mainly over the Internet through specially encrypted email channels that Western intelligence agencies are able to monitor only intermittently. Although most nation-states in the world are skeptical of the WEL's radical agenda, a few of the more virulently anti-Western countries may be providing quiet support to this organization. Sudan, North Korea, and Algeria all may be involved in financing and/or training the WEL's covert action teams.

Tension mounts about the plans of the WEL in the late summer of 2025, after a successful U.S. campaign to kill the proposed fossil fuels emission treaty at the UN. Following the treaty's rejection by the General Assembly, an Internet news release by the WEL condemns "American imperialism" as the main force behind global environmental degradation and promises to strike back at U.S. interests around the world. Within a few hours of the issuance of this news release, Federal Bureau of Investigation (FBI) agents swoop down on previously identified WEL safehouses in New York City and San Francisco, arresting all known American members of the organization. However, the U.S. government's information on the WEL's operations abroad is still too thin to make any similar raids in foreign countries.

Signposts

Economic

- Internet economic growth not slowing down.

Military

- Increasing number of nation-states perceive their main security threat as coming from transnational interests.
- Militaries in Europe, East Asia, and North America becoming smaller and more networked.

International

- Agendas on most global issues (e.g., climate change) are set mainly by transnational organizations.

- Almost half of Global 500 corporations eschew any national identity.

Scenario

Forty-eight hours after the WEL news release, powerful car bombs begin to explode outside major U.S. embassies in a carefully synchronized pattern. Six American posts are hit: Mexico City, London, Madrid, Lagos, Hanoi, and Canberra. Four of the embassies are heavily damaged, while those in Canberra and Madrid are virtually obliterated. Over 400 Americans perish in the explosions and another 600 are injured. At least 600 foreign citizens are killed or injured in the blasts as well. Four hours after the last explosion, an Internet press release from the WEL claims responsibility for the explosions.

Forty-eight hours after the last embassy explosion, a United Airlines 777 bound from Chicago to London collides in midair with an American Airlines 777 flying from London to Dallas. The collision occurs about 80 miles northwest of Heathrow Airport and kills all those aboard both airliners (a total of 386 people, of which 75 percent are Americans). Five hours after the event, a telephone call is placed to Scotland Yard from a WEL spokesman claiming responsibility for the midair collision. The caller reports that WEL information warfare experts placed a computer bug in Heathrow's air traffic control software, causing flight controllers to vector the two U.S. airliners right into each other during a dark moonless night over the English countryside. A quick investigation by Scotland Yard confirms a few hours later that the claim is authentic.

Seventy-two hours after the midair collision, a team of eight masked gunman wearing the WEL emblem on their shoulders storms into a Microsoft research lab outside of Kuala Lumpur, Malaysia. The commandos kill thirty technicians and scientists (ten of them American) before leaving the lab. Seven hours after the Microsoft lab attack, a similar team of ten gunmen attempts to break into an IBM marketing office in Munich, Germany, during the on-site visit of four senior IBM vice presidents from the United States. However, an informant has tipped off German police as to the timing and location of the attack, and they are waiting. All ten WEL gunmen are killed in

a few minutes. On one of the bodies of the dead commandos, German police find detailed blueprints of several other American-owned corporate facilities in Germany, including a McDonald's corporate training center in Frankfurt and a Coca-Cola bottling plant outside Hamburg.

At the same time, a reliable human intelligence (HUMINT) source reports to the CIA that the WEL has been stockpiling nerve gas canisters at a remote base east of Khartoum, Sudan. It is not known if the fundamentalist Sudanese regime is aware of the existence of the stockpile. The same source claims to have been told that some of the nerve gas canisters will be flown to Europe in the next 2-3 weeks for operational use.

To deal with the growing WEL menace, the United States has begun a massive cyberintelligence effort to determine the location of key WEL safehouses around the world as well as the identities of the leaders of the largest cells. Cooperation with foreign law enforcement is readily forthcoming. An effort to sway international public opinion against the WEL is also deemed necessary. Although the WEL's extensive public relations campaign conducted on popup web sites and in chat rooms is not having much effect in the United States, there is some disturbing evidence of growing sympathy for the WEL cause among some of the more socialistic political parties in Western Europe, such as the German Greens. Finally, the U.S. National Security Council (NSC) approves plans for a worldwide series of special operations forces (SOF) strikes against WEL safehouses after the ongoing cyberintelligence collection effort is completed. The Joint Staff estimates that SOF operations in at least 10 countries will be required to severely weaken the WEL. In about 40 other countries, the WEL infrastructure is relatively vulnerable to attacks by local police and intelligence services.

This WEL terror scenario was chosen because it includes a threat that takes advantage of all the major globalization trends to make itself less vulnerable to national law enforcement agencies and militaries. It has no central command structure, operating instead with autonomous cells. It uses informal media outlets on the Internet to advocate its cause globally and also uses the Internet for communi-

cation between its cells. This threat has taken advantage of the porosity of borders in the Transnational Web world of 2025 to implant itself in so many countries that it would take large amounts of international cooperation and planning before any knockout blow against its organization could even be contemplated. Furthermore, the networked structure and Internet communications capability of the hypothetical WEL would allow it to have more rapid decision cycles than most national militaries and law enforcement agencies. None of this is to say that the WEL or an actor like it would be invincible in 2025, only that such a group could indeed be quite formidable.

Chaos/Anarchy

The final world produced by this study was our worst-case world: a future entitled Chaos/Anarchy. In this future, the nation-state has lost considerable power, just as in the previous world, but this time we see power devolving down to subnational actors. The premise of Chaos/Anarchy is that factors such as overpopulation, environmental degradation, and ethnic strife cause the collapse of the nation-state in large swaths of the developing world.⁹ The resulting vacuum is filled by warlords who, lacking a tax base, turn to terrorism and the smuggling of contraband, narcotics, and weapons of mass destruction to support their "regimes." This is a world of massive instability that frequently witnesses mass migrations and virulent epidemics as well as fierce communal violence involving ever more sophisticated weaponry. Terrorist attacks by various subnational groups against major Western cities become disturbingly common. Clearly, the national security threats posed to the United States in this world, by virtue of their diversity, scope, and often shadowy quality, would be more difficult to grapple with than those we have seen in the previous five alternative futures.

⁹ A similarly dark vision of the future is found in Kaplan, "The Coming Anarchy."

There are three major 2025 zones of instability in this particular formulation. The first is Russia/Central Asia. The breakup of Russia into four new and very weak nation-states in 2017 has caused enough instability to allow a steady flow of smuggled conventional, biological, and chemical weaponry into Central Asia, where a number of powerful warlords purchase a portion of this weaponry outright and then sell the remainder to international terrorists, ethnic factions, and fellow warlords in other parts of the world. Although there has been some limited smuggling of enriched uranium into Central Asia, the successor states to Russia have, by and large, been able to secure their stockpiles of nuclear materials and weapons (with considerable help from the United States). Narcotics production and smuggling is also a major growth industry for the Central Asian warlords.

North Africa is the second major zone of conflict in the Chaos/Anarchy world. Here, the ingredient of Islamic fundamentalism has been injected into the already volatile conditions created by overpopulation, youth bulges, perceived government incompetence, and ethnic/sectarian strife. In 2024, civil war erupted in Egypt between the Islamic Brotherhood and secular military units and paramilitary militias in the wake of the collapse of the national government. In the first two months, fighting took place along the entire length of the Nile Delta, but by the beginning of 2025, the secular forces had managed to sweep much of the country outside of Cairo itself clear of fundamentalist fighters. In the first three months of the new year, savage street fighting raged in Cairo as the secularists slowly forced the weakening fundamentalist army into an ever-shrinking slice of the city. At the same time, Algeria experienced a large-scale Berber uprising against a corrupt central government heavily penetrated by the influence of money from the Central Asian warlords. The Berbers had received considerable shipments of weapons (automatic rifles, grenades, mines, and anti-tank rockets) from Russian arms brokers as well as training from a motley crew of mercenaries from Pakistan and the Balkans. The Algerian army's inability to defeat the Berbers despite overwhelming numerical superiority caused the national government to split into two separate geographic factions, one representing the western half of the country and the other the eastern half.

Neither entity declares itself a sovereign state, instead preferring to be called “autonomous zones of governance.” Following the de facto partition of their nation, at least 100,000 Algerian refugees flee toward southern Europe in an armada of small boats and ships. More are expected to make the journey as the nation’s basic infrastructure deteriorates further with each passing month.

In Libya, an Islamic fundamentalist government took power in 2018, only to be deposed in 2021 by a group of powerful Libyan oil ministry bureaucrats backed by several transnational criminal organizations (principally the Chechen mafia). The new Libyan leaders invited all the large multinational oil companies to freely invest in the steadily expanding Libyan oilfields. To protect themselves against the remaining fundamentalist elements in Libya, the oil companies hire bands of mercenaries from the overcrowded Libyan coastal cities and soon are using them to sabotage each other’s operations. By 2025 it is clear that major political decisions in Libya are made by the foreign oil company executives and not by the Libyan “oilcrats” who overthrew the fundamentalist government.

West Africa is a third major area of turmoil in the 2025 Chaos/Anarchy world. Most of the central governments in the region disintegrated completely in the 2000–2010 timeframe, and the area has now been divided up by five competing warlords who fight periodic small wars for control over the major Atlantic ports in the region. Nigeria has broken up into separate Muslim and Christian fiefdoms that make up two of the five dominant warlord groupings in West Africa. These ex-Nigerian “ethnic confederations” are the most powerful of the five West African warlord groupings and have begun to establish special trading relationships with selected European countries in exchange for arms shipments and technical advisors to help rebuild the Nigerian oil fields.

Signposts

Seven 2010 signposts were identified for the Chaos/Anarchy world. They are:

Economic

- Ever-increasing disparity in the distribution of wealth between rich and poor countries.

Military

- An increasing number of developing world militaries degenerate into militias motivated by profit and/or ethnic grievances.
- An upsurge in random violence in the developing world.
- Increasing proportion of Western military operations are in areas with no functioning government.

International

- UN trusteeships administer large swaths of the developing world.
- Trafficking in narcotics and WMD reaches new highs.
- Widespread global epidemics and increasing terrorism compel Western governments to begin to place more and more restrictions on travel and immigration.

Scenario

The illustrative scenario chosen for the Army in the Chaos/Anarchy world was a response to a WMD escalation of the Egyptian civil war that was briefly described above. This scenario was deemed to be the most demanding one in this environment for several reasons. First, it would involve Army operations in a very densely populated urban environment that has already been heavily damaged by a long period of street fighting. Second, it involves the likelihood of operations against hardened and dedicated Islamic fundamentalist guerrillas. Third, it requires the Army to operate in a WMD-contaminated setting with large maneuver units (battalion size and above). Fourth and finally, this hypothetical operation takes place in a country that is of great strategic significance to the United States because of the enduring nature of the U.S.-Egyptian bilateral relationship and also because of Egypt's proximity to Israel. Indeed, the Islamic Brotherhood has made it very clear that if it were ever to take power in Egypt, it would immediately set into motion efforts to destabilize Israel with a large-scale terrorist campaign.

Specifically, the preferred Chaos/Anarchy scenario holds that in the mid-summer of 2025, the Egyptian civil war appears to reach a culminating point as the secularists mass for one final push against the remaining fundamentalist strongholds on the edges of Cairo. As the secularists mass their infantry for the last assault, the fundamentalists stun them by lashing out with a large-scale nerve gas attack delivered from mortar bombs, spray tanks, and artillery shells. The agents used are sarin and tabun. The amounts delivered are massive and the atmospheric conditions are favorable for dispersal on the day that gas is used. Most of the combatants on both sides are killed or disabled, as are thousands of Egyptian civilians. The agents deployed are persistent and contaminate the interiors of many homes, apartment buildings, and businesses throughout Cairo. It is later determined that the Islamists had covertly purchased the nerve gas from an Uzbek warlord in 2024 as they were preparing their initial uprising. The Uzbek warlord had purchased the nerve gas on the black market from a corrupt Siberian lieutenant general who had been stockpiling nerve gas in warehouses outside Novosibirsk ever since the breakup of the Russian Federation.

In the days after the nerve gas attack, absolute anarchy reigns in Cairo as thousands of dead and disabled gas victims lie in the streets. Food and water distribution have broken down completely. Four days after the attack, the NATO Secretary General announces that NATO will send a large stabilization force into Cairo led by U.S. Army units. The NATO force will deploy via a mix of sealift and airlift. In addition to the Americans, the mission, dubbed Cairo Stabilization (CASTAB), will include sizable contingents from Germany, France, and Britain. The Netherlands and Belgium will contribute smaller numbers of troops. CASTAB is commanded by a U.S. general with a British deputy commander. The objective of the mission is twofold: to conduct humanitarian relief and to root out the remaining fundamentalist troops that are hiding in a few shantytowns on the edges of the city. Although intelligence estimates believe there are only 400–500 active Islamist fighters still in the Cairo area, there is the possibility that more Islamists could infiltrate the city from neighboring rural areas. Therefore, CASTAB will have to conduct

some active patrolling along the major entry routes into Cairo as the operation begins.

Implications for Army Force Planning

Now that we have discussed the elements of the individual planning scenarios that have been composed for each of the six worlds, we can move on to try to come to grips with their implications for Army force planning in the 2025 timeframe. Specifically, we can produce rough conceptions of the types of Future Force-level forces and corresponding force structure sizes that the Army might want to create to deal with the types of threats highlighted in the scenarios. The force structure sizes presented here were produced as part of a companion RAND study entitled "Future Personnel Resource Management." This study examined the implications of the six 2025 alternative futures for Army manpower planning. It used historical case studies and discussions with retired Army officers to develop appropriate force packages for each scenario. The force packages were then summed up to produce a total force requirement.¹ In most cases, we will assume that Army XXI and Interim Force Stryker brigade combat team (SBCT) level units are maintained in the active duty force structure and have the same capabilities as are currently envisioned for them by the Army. Our force planning work here deals only with the creation of Future Force-level forces. Also, we do not make specific estimates of the necessary size and composition of the Army's Reserve Components in this study. Our focus is on the active duty force. This is simply because the manpower work that was done in

¹ See Bruce Orvis, Brian Nichiporuk, et al., "Future Personnel Resource Management," unpublished manuscript, RAND Corporation, August 1998.

the companion study focused only on the Active Component because of time and resource constraints.

As was noted in Chapter Two, we make the transition from scenarios to specific armies for 2025 in two simple steps. First, the basic strategies-to-tasks methodology was used to pinpoint both the critical and helpful operational tasks required of Army forces in a given scenario. Second, these desired operational tasks (or capabilities) were used as a guide for the creation of a set of specific force characteristics that would allow the Army to meet the requisite set of tasks. It is important to realize that some of the operational tasks listed as desirable in the scenarios are ones that could also be accomplished by one or more of the other services. For instance, damaging or destroying theater ballistic missiles (TBMs) in flight could be accomplished by the Air Force/Navy as well as by the Army. However, the joint force commander will most likely want to have multiple options for carrying out an operational task and perhaps, in some cases, will desire redundant capabilities in the event that an adversary finds a way to neutralize one of the services' platforms/systems.

In the case of theater missile defense, one could easily imagine a situation in which the presence of threat diesel attack submarines keeps the Navy's theater missile defense (TMD) capable Aegis cruisers and destroyers out of littoral waters and unable to extend a protective umbrella over an entire theater. In such a case, the joint force would benefit from having a ground-based TMD capability owned by the Army to pick up the slack. Finally, for operational tasks that have to do with defending an expeditionary force, like destroying incoming cruise missiles or enemy reconnaissance satellites, most quantitative analyses have shown that benefits result from the deployment of a layered as opposed to a single-system defense.

It is for these reasons that this analysis continues to offer up a number of "shared" operational tasks as important to future Army types. This does not imply that the joint force commander is compelled to use the Army's systems for these tasks, only that the service ought to make them available.

In each scenario, therefore, we came up with a "basket of characteristics" that could easily be described as a specific army type for the

2025 future. Formal campaign modeling was not employed here. The final stage of our force planning analysis consisted of force structure sizing for each army type. By drawing on the force structure requirements of Desert Storm, various contemporary estimates of technology/manpower tradeoffs in the 2025 era, our review of the results of various official Army After Next (AAN) wargames, and the experience of several senior RAND analysts familiar with Army force structure and manpower issues, we were able to compose rough estimates of total force sizes for the active force in each of our scenarios. These size figures include both Future Force and Army XXI/Interim Force SBCT components. As noted earlier, Reserve Component size was not estimated for any of our six future armies.

U.S. Unipolarity and the "Light Lethal Army"

The U.S. Unipolarity world and its corresponding Indonesia scenario yielded a Future Force-level force that is called the "Light Lethal Army."

Specifically, in our assessment the Indonesia scenario was deemed to require the Army of 2025 to perform six critical operational tasks and four helpful operational tasks:

Critical capabilities

- Deploy capable light forces rapidly to theater.
- Destroy cruise missiles in flight.
- Destroy/damage satellites in orbit.
- Destroy/damage advancing light infantry columns.
- Disrupt field logistics sites/assembly areas.
- Shift light forces rapidly from one axis to another.

Helpful capabilities

- Provide timely, accurate information on enemy force disposition.
- Mine/cut key attack routes.
- Mine/cut key supply routes.
- Suppress surface-based air defenses.

The ability to rapidly deploy light, capable forces to the theater is self-evident from the scenario that has been constructed for the Unipolarity world. In the future posited, Borneo is a long way from established Army basing areas, and there is a requirement for Future Force units to be moved quickly from CONUS to the theater via airlift. Indeed, in order to have a chance of slowing and eventually halting our hypothetical Indonesian advance, the vanguard Future Force units would probably need to be fully engaged in combat within 5–7 days of an initial mobilization order. However, since Indonesia is postulated here as having initial air superiority over Borneo, U.S. Air Force and U.S. Navy tactical fighter aircraft would have to conduct a dedicated counterair campaign against the Indonesian air force before Army strategic mobility assets could move ground forces into the theater. This would entail extensive attacks upon major Indonesian air force bases as well as periodic aerial combat with any remaining Indonesian fighters. U.S. Navy aircraft would presumably operate from aircraft carriers positioned in the South China Sea and eastern Indian Ocean. The U.S. Air Force would probably base its aircraft in Singapore and the Philippines. Strikes against enemy cruise and ballistic missile launchers as well as command and control (C2) facilities would also be part of this first phase of the joint campaign. These early strikes might be conducted in part by B-2s operating from CONUS.

The possibility that Indonesia might retain residual capabilities to strike deep in the rear of any American expeditionary force with land-attack cruise missiles after the initial phase of the air campaign warrants the operational tasks associated with ground-based cruise missile interception and anti-satellite operations. The successful destruction of threat cruise missiles in flight by ground-based (ATBM) batteries (like THAAD) would ensure the safety of the theater SPODs and APODs upon which the Army would depend in order to deploy and sustain both the early-arriving Future Force forces and the later-arriving Legacy Force divisions. A demonstrated capacity to use a mix of ground- and sea-based assets to disable or destroy Indonesian-owned or -leased reconnaissance and communications satellites would enable U.S. forces to disrupt the adversary's target planning

and selection process for its cruise missile force, further limiting the damage potential inherent in that force.

The final three critical operational tasks have to do with the operational use of light Future Force forces on the battlefields of Borneo in our hypothetical scenario. Since the Indonesian threat created here is heavily dependent on light infantry units for offensive operations, the need to rapidly disrupt and destroy the movement of advancing light infantry columns becomes paramount for Future Force troops. The dense jungle terrain that covers the battlespace here would force Future Force units to accomplish this task through a mix of firepower and maneuver, since there would be ample opportunity for Indonesian light infantry battalions to conceal themselves effectively enough in the harsh terrain to negate the effectiveness of advanced U.S. airborne and ground-based sensors; effective maneuver would occasionally be required to force these Indonesian units to come out into the open where they would be vulnerable to Army deep fires systems, attack helicopters, and ground-attack aircraft. Any capacity to threaten the adversary's field logistics sites and assembly areas would slow down the Indonesian advance by constricting the flow of water, ammunition, and fuel to spearhead units. Indeed, in the very early phases of U.S. ground participation in this scenario, the disruption and degradation of these sites could be more important than the halting of forward infantry units. Finally, we cannot neglect the ability to shift forces from one axis to another when we think about the critical capabilities that an ideal future force ought to have in the Unipolarity world. Since the U.S. force will be heavily outnumbered by the Indonesians in this scenario, it is vital that the joint force commander is able to get the maximum battlespace coverage possible out of every single task force team. This means that each Future Force combat unit should be flexible and mobile enough to shift the weight of its effort speedily from one sector to another (certainly in a matter of a few hours and perhaps even faster). Such a capability implies a very fluid organizational concept for Future Force task forces so that they can self-tailor themselves to new situations with a minimum of friction.

In addition to the aforementioned critical capabilities, an analysis of the Borneo scenario revealed that four other capabilities would prove helpful to Future Force units if it were cost-effective to so equip them. The ability to provide and disseminate timely, accurate information on enemy force dispositions would primarily be the responsibility of air and space forces in this scenario; however, any additional capability the Army could place into the overall joint sensor architecture, such as ground-based foliage-penetrating radars, would only improve situational awareness for the U.S. side. Mining key attack and supply routes is not as important here as disrupting logistics sites, but these functions would still serve to reduce the ability of the Indonesians to bring decisive numbers and resources to bear at critical junctures along the front. Finally, the suppression of enemy surface-based air defenses would be a primary responsibility of the Air Force as well, and one could expect it with its technological dominance in this scenario to destroy most of the threat missile batteries. However, the Army could contribute to a more effective air campaign by employing innovative tactics to knock out enemy anti-aircraft artillery batteries that would threaten American planes flying at low altitudes. Such a capability could allow the Air Force's advanced fighters and bombers to more effectively deliver cluster munitions and anti-armor missiles.

Moving from Capabilities to Characteristics

The desired capabilities in the Indonesia scenario translated into a basket of characteristics that could best be summed up as forming a "Light Lethal Army" concept for the 2025-era Future Force component. The outlines of this army of the future are now detailed. It is critical to remember that the Light Lethal Army is not designed to win regional wars on its own but instead to hold off and attrit enemy ground forces until several of the slower-deploying Army XXI divisions arrive to begin a full counteroffensive.

Easy deployability is the most important enabling characteristic of the Light Lethal Army. These units must have weight and volume constraints sufficient to allow them to move all of their equipment and initial sustainment over transcontinental distances in the Air Force's existing 2025 airlift fleet (C-17s and C-5s). At the same time,

it is important to understand that the Light Lethal Army is not envisioned as simply an upgunned version of contemporary light forces such as the 82nd Airborne and 10th Mountain Divisions. Instead, it represents a new kind of "medium-light" early entry force with a new generation of combat vehicles in the 10- to 15-ton range.

The Light Lethal Army strikes a good balance between mobility and firepower. Its combat vehicles would have an all-terrain capability and would use speed rather than heavily armored skins as their main mechanism for protection. The logistics footprint of Light Lethal units would be kept low through the use of advanced fuel cells that would minimize the need for fuel support and electromagnetic gunnery systems that would simultaneously reduce the need for munitions resupply. Some of the combat vehicles employed could be wheeled, while other models would be tracked. Crew sizes would be smaller than in today's force, with most combat vehicles having a crew of only two and some of the scout vehicles perhaps requiring only one dedicated crew member on board.

In terms of firepower, the Light Lethal Army would make extensive use of autonomous firepower systems, that is, systems that would be deployed in a fixed location and then fired remotely from a central fire control system. These systems could take the form of distributed rocket pods, each of which would have only one round so that enemy counterbattery radars would become irrelevant in many situations, as they would allow opposing artillery only to target empty pods.² Some advanced self-propelled howitzers would likely be deployed as well for the rapid fire support of maneuver forces, but there would be substantially fewer of these in a Light Lethal unit than in a corresponding Army XXI battalion.

The Light Lethal force would be supplemented by robust C4ISR and TMD architectures. Army assets would be highly integrated into joint networks in both of these areas, and in some situations the Army might not need to deploy many of its own organic systems because it could easily leverage off of joint force capabilities.

² This rocket pod concept has been analyzed in more depth by RAND colleagues Randall Steeb and John Matsumura.

For example, if the Navy were able to position several Aegis cruisers equipped with the Wide Area TMD system in Southeast Asian waters during this scenario, the Light Lethal force could probably limit its deployment of organic theater air defense assets like THAAD to only a few batteries. Air Force unmanned aerial vehicles (UAVs) like Global Hawk could also contribute greatly to Army artillery and rocket targeting in this scenario.

In terms of force structure size, the Light Lethal Army should be regarded as this study's baseline case in that it is assumed to be part of an Army active force structure that is roughly the same size as the 2000-era Army of Excellence: in other words, a total force of 10 division equivalents and about 480,000 personnel. The requirements of the U.S. Unipolarity world were found to require a total force composed of five Light Lethal divisions and five Army XXI/Interim Force divisions. This force structure would be sufficient to handle two near-simultaneous regional wars of the Indonesia scenario type with some force residue left to both provide a strategic reserve and handle any ongoing stability and support operations (SASO) contingencies.

Democratic Peace and the "Policing Army"

Our second best-case alternative future was Democratic Peace. The basket of characteristics designed to meet the demands of our Colombia scenario in the Democratic Peace world has been entitled the "Policing Army."

Project analysis revealed that there were eight critical and two helpful operational tasks required of Army forces in the Bogotá cease-fire enforcement scenario. They are:

Critical capabilities

- Clear urban zones of enemy infantry.
- Secure base perimeters.
- Create belief that operating combat equipment will bring certain harm.
- Maintain presence in disputed sectors.

- Monitor enemy activities in urban terrain.
- Provide coalition interoperability in communications and planning.
- Disrupt enemy communications.
- Disrupt enemy satellite links.

Helpful capabilities

- Restore damaged civilian infrastructure.
- Destroy/damage handheld SAM launchers.

The imperatives of a cease-fire enforcement mission clearly create a different set of concerns for deployed Army forces than do those seen in the previous combat scenario in Borneo. In this particular case, the ability to both provide visible physical presence and have a psychological impact upon the rival drug gangs is paramount. Perhaps the most pressing task at the outset of this kind of deployment would be to ensure that the declared urban safe zones are indeed free of armed fighters employed by the rival drug cartels. If any armed elements are able to maintain a covert presence in the declared safe zones, then cease-fire enforcement would become ever more difficult as time progressed.

Over the longer term, the most salient of the critical operational tasks would be that of creating a belief among fighters in both cartels that the operation and possession of combat equipment will bring them certain harm at the hands of U.S. and coalition forces. U.S. troops and their allies will have to patrol buffer zones and run disarmament centers in such a manner so as to convince the formerly warring parties that it would be to their disadvantage to seek to renew hostilities, even at a low level. Furthermore, this perception among the former combatant forces will have to be fostered at the same time as efforts are made to win the faith and trust of the civilian population and local civic leaders. This could become a delicate balancing act and will demand a lot from junior Army officers and NCOs. Special Forces personnel would undoubtedly need to play a key role in the Army's community outreach programs in this particular scenario.

Success in this type of SASO contingency will also depend upon the Army's ability to keep up a steady presence in the more volatile districts of the city so as to increase confidence among the civilian populace that American and allied forces are serious about ending the armed conflict. This presence task is already being accomplished by Army forces today in Bosnia and Kosovo on an almost daily basis, so it should not be too demanding a task to carry out in 2025. A more difficult task would almost surely be that of monitoring enemy activities in urban terrain. Good intelligence gathering and assessment would help Army commanders to understand both the plans and intentions of the potentially hostile drug cartel leaders as well as the overall mood of the civilian populace and its interpretation of U.S. Army behavior on the streets. Such information would allow the Army and its allies to achieve superior situational awareness. However, intelligence gathering in urban areas (especially developing world urban areas) is very difficult as the clutter of buildings, alleys, and shanties affords many convenient hiding places to small groups of armed fighters working for guerrilla groups or, in this case, organized crime networks.

In the area of tactical communications, we find that three critical operational tasks are evident in the Bogotá scenario. First, on the friendly side it will be necessary to ensure communications interoperability between U.S. and allied Latin American units, down to the platoon and squad level. Good interoperability will allow seamless tactical support and prevent individual small units from being pinned down and isolated because they cannot communicate quickly with adjacent foreign allied forces. On the other side of the coin, there is the general objective of disrupting and/or monitoring the communications of the adversary as effectively as possible. This counter-C2 objective is particularly challenging in our Bogotá scenario because the drug cartels are posited to have very sophisticated communications gear purchased on the international black market; items such as advanced frequency-hopping radios and encrypted cell and satellite phones are part and parcel of the cartels' "order of battle" in this case. The counter-C2 objective yields our second and third critical opera-

tional tasks in the communications area: disrupt enemy communications and disrupt enemy satellite links.

Two helpful, but not indispensable, operational tasks round out the portfolio of capabilities desired for the Army in the context of the Bogotá cease-fire enforcement scenario. Restoring damaged civilian infrastructure is not a core mission for the Army in this scenario, as its main task has to do with separating the warring parties and creating a peaceful urban environment for the residents of Bogotá. It is assumed here that international aid agencies as well as the Colombian private sector will take the lead in rebuilding the infrastructure that has been damaged in Bogotá. All of this notwithstanding, the Army probably would accrue some marginal benefit from having enough support engineering equipment with it to carry out some emergency repair jobs during the early days of the operation. The other helpful task is to be able to destroy or damage any handheld SAM launchers that the cartels might have hidden away in the city. This would presumably involve the use of sophisticated sensors that could identify the signature made by the infrared seekers used on most handheld SAMs. Since the Air Force of 2025 will presumably have some way of accomplishing the same mission with airborne platforms (either manned or unmanned), this is coded only as a helpful, and not a critical, task.

Moving from Capabilities to Characteristics

The basket of characteristics that responds to the requirements posed by the scenario chosen for the Democratic Peace world is labeled the "Policing Army." The Policing Army is designed mainly for participation in multinational peacekeeping and cease-fire enforcement operations within the overall context of a benign international system.

Our Policing Army would be made up predominantly of high-quality light infantry, small packets of 2000-vintage armor and armored infantry, significant numbers of Special Forces detachments, and a robust force of reliable transport helicopters. Intertheater mobility would be less important here than in our first world because the deployment time pressures for peacekeeping operations are generally lower than for fast-moving combat operations. Special Forces are

highlighted here as the major area of force structure growth for the Army in this world. Significant technological modernization in the heavy forces area would not be needed in order to transition to this particular future.

Military Operations in Urban Terrain (MOUT) intelligence-gathering capability, communications equipment well suited to the demands of coalition interoperability, and advanced nonlethal weaponry would be at a premium in this scenario and should all be present in the Army's force structure down to the small unit level. Nanotechnology would be an area of interest for the Policing Army because it offers the promise of microsensors—such as miniature UAVs—that could be placed into individual buildings in a dense urban environment in order to perform SIGINT collection. Advanced types of nonlethal sleep agents, microwave weaponry, and sticky foam are examples of the types of tools the Policing Army would have to both perform crowd control in an urban environment and weed out armed fighters who might be taking refuge in a mass of innocent civilians.

The force structure supporting the Policing Army is significantly smaller than that supporting the Light Lethal Army. It is two-thirds the size of today's Army of Excellence and does not contain any active Army XXI divisions. In other words, in the Democratic Peace future all of the Army's active duty divisions would be light policing units. This is justifiable because based on our assumptions about this future, the likelihood of an armored attack threatening vital American interests anywhere in the world is minuscule. If an armored threat to American interests were to emerge, it would do so with considerable warning time (2–3 years); this would allow Army force planners to place all of their Army XXI divisions into the Reserve Components and man them at only cadre strength.

Major Competitor Rising and the "Big War Army"

Major Competitor Rising is the first of our two medium-good worlds and has yielded a basket of characteristics that is called simply the "Big War Army." This army has been designed specifically to deal

with a very large-scale conventional conflict in a well-defined geographical theater of operations.

Twenty critical capabilities were identified for the Big War Army. They are listed below.

Critical capabilities

- Destroy/damage advancing armored vehicles.
- Destroy/damage accompanying support vehicles.
- Destroy/disable/pin armored vehicles near line of contact.
- Disable/pin dismounted troops near line of contact.
- Destroy/suppress artillery and multiple rocket launchers.
- Destroy/damage armored and other vehicles in defensive positions.
- Mine/cut key attack routes.
- Disrupt field logistics sites, assembly areas.
- Drop bridges, block tunnels and other choke points.
- Sever key petroleum pipelines.
- Destroy/damage fixed and mobile SAM launchers.
- Destroy ballistic missiles in flight.
- Damage/destroy transporter-erector-launcher (TELs) in the field.
- Destroy/damage satellites in orbit.
- Disrupt satellite links.
- Destroy/damage command bunkers.
- Disrupt enemy communications.
- Disseminate disinformation to enemy commanders.
- Protect own battlefield information systems.
- Move forces rapidly between theaters.

These twenty critical operational tasks fall into six major categories. It is imperative to remember that we are dealing with a contingency in which substantial American forces are already prepositioned in theater and in which the opponent has a significant amount of firepower. Therefore, intercontinental mobility is of less importance here than in our other conventional warfare scenarios, and survivability of ground forces becomes relatively more important while mobility becomes somewhat less important.

The first six critical capabilities listed above all deal with the ability to physically attrit enemy vehicles and troops near the front line of contact. This cluster of operational tasks reflects the reality that against a heavy opponent in the channeled hilly and mountainous terrain of the Caucasus, pure attrition through firepower will be more important to the Army and its allies than will maneuver operations. Hopefully, much of this physical attrition can be accomplished by precision artillery and rocket systems (as well as tactical air), rather than by U.S. armor and infantry units, so as to keep American casualties relatively low.

Following the first cluster, there is a group of four key operational tasks that have to do with disrupting the ability of the threat forces in this scenario to resupply and reinforce their units at the front. This can be done either through the blocking and/or destruction of resupply routes and/or the destruction of rear area logistics and supply depots. Once again, the channeled terrain of the Caucasus region would seem tailor made to these kind of deep-interdiction attacks. Clearly, advanced attack helicopters like Comanche would be useful for these kinds of operational tasks in the Major Competitor Rising scenario.

Third, we have one operational task that incorporates the Army's possible contribution to SEAD in this scenario. Although SEAD will primarily be the responsibility of the Air Force here, the Army could contribute to a more rapid achievement of U.S. air superiority by using deep-fires systems (possibly cued by Army UAVs) to destroy some enemy SAM sites (both fixed and mobile).

Fourth, we find a group of two operational tasks that involve the neutralization of the enemy's ballistic missile threat to American and allied SPODs and APODs in the theater. Both defensive and offensive operations against threat TBMs are required in the Caucasus scenario. Defensive operations involve the interception of ballistic missiles in flight through the use of Army assets such as THAAD and MEADS, while the offensive side of the operation would involve attack operations against TBM launch sites, most likely with advanced attack helicopters.

Fifth, there is a group of operational tasks having to do with winning the struggle for battlefield information dominance with the Russian adversary. Winning this battle in the large war scenario would require both hard kills (e.g., destroy/damage satellites in orbit) and soft kills (e.g., disrupt satellite links) of enemy systems. Additionally, the information contest would require the Army to secure its own battlefield systems against enemy information warfare tactics.

Sixth and finally, one operational task is listed for the area of operational/tactical mobility of Army forces. This is the capability to "move forces rapidly between theaters." The need to insert this final operational task was due to the possibility that the Army may have the opportunity to transfer some of its units from the Caucasus to the Balkans during the course of this scenario if the conflict in the Caucasus proceeds favorably at an early stage.

Moving from Capabilities to Characteristics

In the preceding section, we already saw clear hints as to the types of characteristics that would serve the Big War Army well in a hypothetical Caucasus war with Russia. A Big War Army would emphasize survivability over mobility in its maneuver forces, so its armored vehicles would be heavier and slower than those found in our Light Lethal Army concept. Armored vehicles in the Big War Army would rely upon new types of armored protection and active defensive measures for their battlefield protection rather than on speed.

A Big War Army would include a very large number of sophisticated ground-based deep-fires systems for the purpose of attriting enemy armor en masse, aiding the Air Force in the SEAD mission, and targeting adversary supply routes and supply/logistics depots. These systems would probably include a mix of artillery, rocket launchers, advanced tactical missiles, and possibly even large-caliber mortars equipped with laser-guided munitions. The deep-fires weapon systems themselves would obviously have to be supported by a network of air-, ground-, and space-based sensors as well as high-capacity communications links capable of moving data rapidly between sensors and shooters. This would probably be the most technologically

important area for the Big War Army, requiring possibly even more investment than new heavy armored vehicles.

Attack helicopters play a key role in this scenario as a mobile supplement to ground-based deep-fires systems. In the channeled terrain of the Caucasus, they could be an effective tool in helping fixed-wing tactical air power interdict enemy resupply and reinforcement columns. Attack helicopters like Comanche would also be an important real-time intelligence-gathering platform that could supplement UAVs and reconnaissance satellites.

Finally, the presence of a large ballistic and cruise missile threat would require the Big War Army to forward position significant ground-based TMD capabilities (e.g., THAAD) in the Caucasus theater. There could perhaps even be a need for the Army to preposition ground-based ASAT systems in the theater in order to be able to help the other services disrupt enemy communications, at least periodically. In this scenario, the strategic nuclear capability of the Sino-Russian Entente would almost certainly force DoD to deploy some kind of national missile defense system, one in which the Army would probably play a role as well. It is safe to assume that in this Major Competitor scenario, the Army would be manning and managing some network of ground-based strategic missile interceptors in CONUS. Based on current technological trends, it appears likely that these would be kinetic-energy, hit-to-kill interceptors.

In terms of force structure sizing, our rough analysis resulted in a total Army that is approximately 10 percent larger than today's Army. Furthermore, we made the assumption that the entire active duty force structure would be modernized up to 2025 Future Force technology standards. In other words, the Big War Army does not include any Army XXI divisions in the active component. All of the Army XXI divisions have been moved into the Reserve Component in the Major Competitor Rising world. It is fair for the observer to wonder why we created a force structure for the Big War Army that is only 10 percent larger than that of today's Army. We justify this decision to hold force structure down primarily by assuming that technological advances are large enough to allow the Army to have a much greater operational impact with battalion- and brigade-sized

formations than it can today. The Army will simply be leveraging advanced technology in this world much more decisively than it does today. A secondary factor in our reasoning was that the kind of scenario facing the Big War Army is tailor made for the type of advanced tactical air power the Air Force is developing today with its F-22 and JSF programs. These platforms, when equipped with brilliant air-to-ground munitions, would be able to devastate the types of previous-generation armored formations we assume the Russians will be employing in our scenario. Therefore, we feel that the decisive role the Air Force can play here allowed us to keep Army force structure down in favor of weapon system modernization.

Competitive Multipolarity and the "Global Maneuver Army"

Competitive Multipolarity is our second medium-good world. It represents a fluid geopolitical future in which the international environment is characterized by a set of three or more competing blocs, each led by a different great power. In our disintegrating Iraq scenario, we assume that the United States, Russia, and China have assumed roles as bloc leaders in 2025. The military challenges facing the United States and its Army in this future are quite different from those we encountered in the Major Competitor Rising future. Here, the task at hand is not preparation for a massive conventional war in a clearly defined theater, but instead the rapid projection of power into "non-aligned" or unstable countries/regions in order to build American political influence globally over time. The type of 2025 Army the United States would need under these circumstances is called the "Global Maneuver Army."

Project analysis revealed that five critical operational task-level capabilities and five helpful capabilities would most likely be needed to deal with the operational environment posed by the disintegrating Iraq scenario. They are:

Critical capabilities

- Deploy capable heavy and light forces to theater.
- Execute rapid, long-distance intratheater deployment.
- Construct and maintain main supply routes.
- Carry out timely, accurate dissemination of commander's intent.
- Destroy/damage armored and other vehicles in defensive positions.

Helpful capabilities

- Rapidly establish large supply bases.
- Protect petroleum, oil, lubricant (POL) infrastructure.
- Redeploy space assets as needed and sustain constellations on orbit.
- Provide timely, accurate reports on friendly force disposition.
- Provide relief supplies to civilian populace.

The first three critical capabilities required for the Global Maneuver Army have to do with moving units rapidly both to and within the theater of operations—in this case Southwest Asia. To be at all effective in accomplishing its missions of short-notice forward presence and political influence building, the Global Maneuver Army has to be able to help provide for smooth and frictionless deployments of a capable mix of heavy and light forces from either CONUS or bases in friendly countries like Great Britain, Germany, or Japan to distant zones of geopolitical competition. This means that the Global Maneuver Army would have to field unit equipment sets that are, for the most part, easily transportable in the Air Force's medium and heavy airlifters. At the same time, it would invariably be important for the Global Maneuver Army to have clearly developed concepts of operation that would allow arriving units to transit directly from their ports of debarkation into combat without having to spend significant time in vulnerable marshaling and assembly areas.

Once the Global Maneuver Army's units arrive in theater, it is very likely that they will need to quickly move long distances from their initial debarkation areas in order to deter the forces of rival alliances from moving into the Iraqi political heartland around Baghdad

or perhaps even to compel those rival alliance forces that might already be there to withdraw. Speed within the theater, in other words, would be the key element used by the vanguard units of the Global Maneuver Army to both create *faits accompli* on the ground and back up political brinkmanship tactics employed by U.S. policymakers.

The construction and maintenance of main supply routes within the theater is critical, as they will furnish food, fuel, and munitions to forward units carrying out the political influence-building mission. The credibility that these forward expeditionary units bring to their mission will be highly correlated with their capacity to sustain combat operations for the long term; units with little staying power will not be able to exercise much political leverage over local leaders and rival alliance units and could also fall prey to an escalating series of low-level probes and raids designed to identify, and perhaps even publicize, their weak points.

Our fourth critical capability for the Global Maneuver Army in our disintegrating Iraq scenario is the timely and accurate dissemination of the theater joint force commander's intent. This may well be the most important of the critical capabilities listed for this scenario. In political influence-building operations like those envisioned in Iraq for the Global Maneuver Army, tactical-level units need always to have a very clear understanding of the complete politico-military vision of the theater commander and their role in allowing friendly forces to achieve that vision. Such an understanding is important because "show the flag" operations like those to be expected here can often involve close contact and possible confrontations with the forces of rival alliances (perhaps similar in nature to the confrontation between British and Russian troops at the Pristina airport in June 1999). In these situations, small unit commanders need to fully share in the theater commander's perception of the theater battlespace so that they can either (1) take the necessary measures to ensure that local tactical standoffs do not lead to open combat or (2) actively prepare their units to transition from influence projection/deterrence to combat if it is decided that certain objectives in the area are actually worth fighting for.

The fifth and final critical capability for the Global Maneuver Army is the ability to destroy and/or damage armored and other vehicles in defensive positions. This capability is very important in the disintegrating Iraq scenario because, depending on the flow of events, the forces of a rival alliance may be able to reach certain key terrain features before those of the United States and its allies can, and if those features are viewed as indispensable to U.S. interests in the region, Army forces will need a credible capability to destroy the forces already holding them and then occupy the areas in question.

In terms of the five helpful capabilities, we can see that the first two have to do with logistics, the second two with command and control, and the last with possible humanitarian relief operations. The establishment of large supply bases and the protection of key elements of the POL infrastructure would enable U.S. forces to sustain a long-term presence as well as support the economic development of the region. Since these capabilities relate to longer-term goals and objectives in the theater, we have not rated them as critical.

The deployment and movement of key space assets (i.e., dedicated military and leased commercial communications and imagery satellites) would allow for the kinds of flexible and redundant intelligence and C2 networks needed to support the transmission of the commander's intent in the theater. By the same token, it would be very helpful to maintain a consistent view of friendly force dispositions in the theater so as to minimize the possibility of fratricide and be able to efficiently assign units to missions in the fluid environment that characterizes our Iraq scenario.

Finally, we come to the capability to distribute relief supplies to civilians in the theater of operations. Having this capability on hand would be helpful because the confused political environment of a large, disintegrating nation would inevitably result in large numbers of internally displaced persons, many of whom would be living in temporary camps. The ability to provide food and medicine to these displaced persons would save lives and also build positive political capital for the United States, at least in certain towns and villages.

Moving from Capabilities to Characteristics

In terms of overall combat force organization and equipment, the Global Maneuver Army is broadly similar to the Light Lethal Army that was created to deal with our first alternative future. It will have significant strategic mobility so that it can move into disputed regions very quickly to achieve early forward presence and begin to build political influence. The Global Maneuver Army will also have enough organic and reachback firepower deploying with it to deter and, if necessary, defeat previous-generation heavy forces that may oppose its insertion into a theater of operations.

The most significant characteristics of the Global Maneuver Army, which also distinguish it from the Light Lethal Army, are its extensive and well-developed C2 and logistics networks. The peculiar demands of the kinds of scenarios in which the Global Maneuver Army will be involved make it imperative that this force have highly redundant and flexible operational C2 architectures that can transmit the commander's intent down to the small unit level. At the same time, obviously, these architectures cannot hamstring tactical commanders and/or permit mid-level commanders to micro-manage down to the platoon and company level. The ever-present risk of escalation to combat that one sees in the Competitive Multipolarity world places an absolute premium on technically reliable and operationally pliable C2 architectures.

Logistics is the other area where this force of the future would have characteristics that stand out. The Global Maneuver Army's requirement to support forward units at the end of very long supply lines as well as the imperative to always be ready to transition from presence to combat operations place a heavy burden on the logistics support chain in this case. The burden on logistics in the Global Maneuver Army is certainly higher than that seen in the Light Lethal Army. Therefore, another of the key characteristics of this future army is the possession and use of highly advanced, modular, and streamlined logistics chains. These chains would have high in-transit visibility and would not rely on large inventory stockpiles in rear areas. Instead, just-in-time methods would be used to push precise

quantities of the necessary materials forward at exactly the right time. There would be little margin for error in this construct.

Our force structure sizing analysis produced an estimate for Global Maneuver Army that was larger than those for any of the other five future armies in this study. We estimated that, in order to fulfill all of its responsibilities, the Global Maneuver Army would need to be 50 percent larger than today's Army of Excellence. This translates into an active component in 2025 that has about 15 division equivalents of personnel. Half of this force would be modernized to Future Force standards, while the other half would only be modernized to Force XXI or Interim Force standards. Why does this force need to be so large? In this case, we believe a large force is justified because of the dispersed geographic nature of American commitments. The Competitive Multipolarity world posits an international environment filled with alliance rivalries across the globe. Geopolitical alignments would be very fluid, creating new opportunities and dangers for the United States on an almost yearly basis. Therefore, to retain credibility the United States would need an Army rotation base sufficient to keep at least five or so divisions deployed abroad every year (enough to support two major and one minor commitment). For each division stationed abroad for a year, we would need to have one division returning home for a year of rest and refit and another division training itself up to deploy overseas in the next year. The need for this rotation base and associated readiness cycles would demand a 15-division force. Conceivably, one could reduce the active component force structure here by positing 2- or 3-year tours of duty abroad for each division. However, since most enlistment terms are three years or less, this kind of rotation policy would create great turbulence in the Army personnel management system. If a large-scale war were to break out with a rival alliance, the National Guard would probably have to be mobilized, at least for the purpose of backfilling for those active divisions that would be pulled out of the rotation base to return overseas. In this world, it is easy to see that Army force management policy would closely resemble that of Navy carrier task force management today.

Transnational Web and the "Netwar Army"

Transnational Web is our first and only medium-bad world. As the reader will recall, it describes a world in which the power of the Internet has weakened many nation-states relative to transnational non-state actors. Our response to such a world is a force we call the "Netwar Army." The Netwar Army is designed to deal with networked, geographically dispersed, hostile transnational actors. It has three components: (1) an information warfare/cyberintelligence group, (2) a cyber public affairs corps, and (3) a collection of SOF-like teams designed for rapid movement overseas and multiple, simultaneous strikes against terrorist cells located in foreign countries. It is assumed that, in most cases, these SOF-type units will work in tandem with foreign law enforcement agencies.

We identified ten critical and three helpful capabilities necessary for the operation of the Netwar Army in the 2025 timeframe:

Critical capabilities

- Portray U.S. actions favorably to global media.
- Corrupt/degrade enemy information databases.
- Protect own databases and sources of information.
- Monitor enemy communications.
- Disseminate false information to the enemy.
- Cooperate with foreign law enforcement.
- Deploy networked SOF teams to selected foreign nations.
- Secure U.S. embassies.
- Help secure foreign airports.
- Mount strikes and raids against enemy hideouts.

Helpful capabilities

- Maintain backup operating systems and data.
- Disrupt enemy satellite links.
- Recruit web informants.

The critical capabilities presented map easily to the three-tiered structure of Netwar Army. A demonstrated ability to portray American actions favorably to the world media is pivotal to operational suc-

cess in the type of world we foresee in the Transnational Web future. The increasing density of international mass media links and the increasing number of businesses and homes (at least in the industrialized world) receiving near-real-time information flows 24 hours a day in sophisticated graphical form will make "positive spin control" for U.S. actions a very potent tool indeed. Certainly, good public relations work will not win battlefield engagements; however, it could well eat away at an enemy's morale and will to win over the long term. Since the enemy in this vision of the future will usually be a nonstate actor, good PR could have the added benefit of turning those nation-states that are hosting nonstate military units on their territory against their erstwhile "guests."

Our second through fifth critical capabilities all have to do with information warfare or electronic intelligence gathering. The ability to corrupt and degrade enemy information databases is a standard tactic in offensive information warfare and would be used in this world to reduce the ability of malignant transnational actors to prepare and plan computer network attacks. Conversely, a standard tactic for defensive information warfare is seen in the third critical task presented, which is the protection of the Army's own databases and sources of information. Clearly, information warfare will not be prosecuted successfully against flexible, agile transnational actors without securing the Army's own electronic intelligence data. The fourth and fifth capabilities mentioned above have to do with SIGINT work. Good SIGINT will be a vital complement to information warfare capabilities in the proposed Netwar Army of 2025. This includes both the monitoring of adversary communication streams and the actual breaking into adversary command nets to spread disinformation. It should be noted here that the spread of fiber optic cables and technology around the world is making these tasks much more difficult for the United States. Substantial research and development efforts at the DoD level may be required in order to enable the Netwar Army to meet its SIGINT requirements.

Finally, we come to five critical capabilities that involve actual "boots on the ground" in foreign countries in the context of situations such as that seen in our environmental terrorist scenario. Exten-

sive cooperative relationships with law enforcement agencies in key regions of the world where the U.S. private sector has significant property and investments that may be vulnerable to terrorist attack are of paramount importance to the Netwar Army. Western Europe, East Asia, and Latin America would be the most important regions in this regard. In addition, Netwar Army forces must be able to deploy abroad with full equipment suites within hours of the outbreak of a terrorism incident. Once in theater, these units would have to help local authorities secure critical facilities such as U.S. embassies, airports, power-generation plants, and telecommunications control centers. Netwar Army forces would be required to identify and storm terrorist hideouts and safehouses without suffering significant casualties. Such operations would require sophisticated equipment, ranging from covertly implanted listening devices to night-vision equipment and chem/bio warfare protection gear.

There are also three helpful capabilities for Netwar Army that were identified during the course of our analysis. First, the maintenance of backup operating systems and data by the Netwar Army would provide insurance in the event of a breakdown in defensive information warfare systems. Second, the ability to disrupt enemy satellite links would be useful in that it could, temporarily at least, prevent a hostile transnational actor from exercising worldwide point-to-point communications to mobile users. This might slow down the operational tempo of some terrorist cells. Finally, there is the capability to recruit sophisticated web users as informants. These individuals could serve as an early warning system for impending transnational terrorist organizations by frequently monitoring email traffic to and from certain addresses as well as watching the evolution of certain suspect web sites. This type of activity by the Army would of course raise thorny questions with respect to privacy, civil liberties, and domestic espionage. These could perhaps best be solved by turning the web informant function over to the FBI and CIA, while at the same time setting procedures in place to ensure that those agencies keep the Army's operational commanders informed of key pieces of intelligence.

Moving from Capabilities to Characteristics

Needless to say, the Netwar Army is not at all similar to any of the other five hypothetical armies of the future that are being posited in this study. It is not aimed at a conventional opponent nor at typical low-level small-scale contingency (SSC) types of opponents such as warlords, religious fundamentalists, and other kinds of irregular sub-national armed forces. Therefore, the characteristics and force structure of the Netwar Army are unorthodox as well.

Specifically, we envision the technologically advanced portion of the Netwar Army as being composed of three distinct tiers of forces. First would be a robust cyberintelligence/information warfare corps made up of seasoned, long-serving computer specialists and intelligence analysts. Second would be a well-trained public affairs branch that could rapidly defeat the Internet propaganda offensive that will surely be launched by hostile transnational actors in order to sway U.S. public opinion in their favor. Third and finally, the Netwar Army will field a small combat force of its own. This would comprise several elite anti- and counterterrorism units made up of SOF personnel that could deploy anywhere in the world on short notice to attack terrorist/mercenary cells controlled by hostile transnational actors. These special units would be networked, not hierarchical, and would often work closely with foreign law enforcement agencies. Backing up the Future Force-level component of the Netwar Army would be a residual force of Army XXI divisions standing ready to deal with more traditional types of military aggression against U.S. interests in critical parts of the world. However, these forces would be of secondary priority in the Transnational Web world that is posited in this study.

In terms of force structure, the Netwar Army would be the smallest of our six armies. Excellent netwar capabilities simply do not require large numbers of personnel. This fact points out the reality that there will be no clear positive correlation in the future between the magnitude and seriousness of external threats and the optimal active duty force structure of the U.S. Army. Here we see that our medium-bad world presents daunting challenges to American leaders

yet requires an Army significantly smaller than today's force to meet those challenges.

Specifically, the Netwar Army would be nearly 40 percent smaller than today's active Army. In addition to the three-tiered high-tech force discussed above, this Army of 2025 would include 3–4 Army XXI divisions as a hedge against the outbreak of "traditional" forms of conventional aggression against U.S. interests abroad. Thus, we can safely assume that the Future Force portion of the Netwar Army would consist of 2–3 division equivalents of personnel.

Chaos/Anarchy and the "Dirty Environment Army"

Our sixth and final army is called the "Dirty Environment Army." The Dirty Environment Army is a response to the mass disorder found in our worst-case world, the Chaos/Anarchy world. In this future, the nation-state has broken down in many regions of the world and been replaced as the dominant political authority by warlords, radical religious fundamentalists, and guerrilla groups. Proliferation of WMD, especially chemical and biological weaponry, is increasing in this future because of the porosity of borders in those regions where the nation-state has either weakened considerably or disappeared altogether.

Specifically, the Dirty Environment Army is created in response to the Egyptian civil war scenario presented in this study. This scenario assumes a breakdown of the Egyptian government in 2025, followed by open warfare throughout the country between Islamists and secularists. After a few months, when it becomes clear that they are losing, the Islamists launch a large-scale nerve gas attack on Cairo in a last-ditch effort to terrorize the secular forces. The attack results in massive civilian casualties and contaminates much of the infrastructure of the capital city. The United States responds by leading a NATO expedition into Egypt both to provide humanitarian relief to the citizens of Cairo and to conduct urban counterinsurgency operations against the remaining Islamist guerrillas. Army forces are in the vanguard of this effort.

There are ten critical and two helpful capabilities that are required in the Egyptian civil war scenario. They are presented below.

Critical capabilities

- Decontaminate an urban environment.
- Protect personnel from NBC effects.
- Protect equipment from NBC effects.
- Establish inland main supply routes.
- Secure bases.
- Clear the urban zone of enemy infantry.
- Monitor enemy activity in the urban zone.
- Establish coalition interoperability in communications and planning.
- Escort relief convoys.
- Repair urban infrastructure.

Helpful capabilities

- Disable/pin down dismounted troops near the line of contact.
- Suppress urban disorder.

The first critical capability is clearly the ability to decontaminate a large urban environment. Before the main body of NATO troops moves into the city, it will be necessary to have achieved a basic level of decontamination so that some distribution of relief supplies can begin immediately. There might be a need for the Dirty Environment Army to contain some special air-mobile decontamination teams that would fly into affected urban areas at the outset of a contingency to assess the level and nature of contamination and start basic decontamination procedures.

Our second and third tasks here are the protection of both personnel and equipment from NBC effects. This means that all of the soldiers in the Dirty Environment Army will have to have access to excellent individual and collective protection gear. Vehicle washing systems will also have to be available for the cleansing of tanks, armored personnel carriers (APCs), trucks, etc.

Fourth and fifth on our list are a pair of logistics tasks. The establishment of clear main supply routes from sea and aerial ports of

debarkation into the affected city as well as the securing of several main base areas outside the contaminated zone will be of paramount importance if an operation such as this is to be sustained over the long term. Clear, high-capacity supply routes will be necessary so that relief supplies can be brought into the affected city and critical civilian casualties can be brought out. Secure base areas that are clean are indispensable because they will provide safe areas where troops can remove their chemical protection gear and rest.

Our sixth and seventh tasks have to do with the neutralization of the residual threat of Islamist guerrilla activity in the city of Cairo. To accomplish this goal it will be necessary to clear key urban zones of organized enemy infantry units as well as to monitor any low-level Islamist activity in those areas, such as intelligence gathering or intimidation of civilian residents. Eighth on our list is the establishment of good technical interoperability between U.S. and foreign forces; such interoperability would increase operational flexibility and ensure unity of effort among the different national contingents. The ninth and tenth critical capabilities are the escort of relief convoys (which is self-explanatory) and the repair of the urban infrastructure. This latter capability is important since the nerve gas attack of the scenario was preceded by several months of bitter street fighting between the rival sides in the Egyptian civil war. This fighting destroyed much of the power, water, and transportation infrastructure in the greater Cairo area. Repairing this infrastructure quickly is essential if the spread of disease, hunger, and civil unrest is to be avoided.

There are two capabilities deemed helpful to the Dirty Environment Army: disable/pin down troops near the line of contact and suppress urban disorder. These capabilities are judged in the study to be helpful and not critical because it is assumed in this scenario that there would be little need for large-scale combat with Islamists or riot suppression if the initial relief and decontamination efforts are accomplished quickly and efficiently. If the NATO forces are able to stabilize the urban environment within a few weeks, it is doubtful that the remaining Islamist guerrillas would find enough public support to begin large-scale conventional urban attacks on NATO and U.S. forces. Small-scale ambushes and sniping can be ex-

pected, but they should be brought under control relatively easily by a force as capable as the Dirty Environment Army.

Moving from Capabilities to Characteristics

Based on the required capabilities noted above, we created a very specific force structure for the Dirty Environment Army. It is essentially a larger, more capable version of the Policing Army that was created as a response to the Democratic Peace world. The Dirty Environment Army has a very robust force-protection capability, including comprehensive defensive systems to protect personnel and equipment against nuclear, chemical, and biological attack. In case these defenses should fail, the Dirty Environment Army has a larger-than-usual complement of medical personnel. Its emphasis is on light infantry with light armor and heliborne support. Just as in the Policing Army, there would be a need for advanced MOUT technologies, especially sensors that could gather accurate, real-time intelligence on enemy positions, strength, and intentions. UAVs and microsensors would be among these technologies. Finally, since this Army will often be operating in heavily damaged areas, it will bring with it a large component of support engineers for infrastructure restoration.

In terms of size, the Dirty Environment Army is about 10 percent smaller than today's active Army. It includes 5–6 Army XXI/Interim Force divisions as insurance against unexpected contingency types. Thus, the Future Force-level forces in this world will be made up of 3–4 division equivalents of dedicated "dirty environment" forces. The Dirty Environment Army is larger than the Policing and Netwar armies proposed for other worlds, but it is smaller than the Light Lethal, Big War, and Global Maneuver armies.

Some Final Thoughts

As we have seen in the preceding chapters, there are a number of potential paths that the international security environment could take during the next quarter century. At the moment, the U.S. national security community does not, unfortunately, possess analytic tools with enough power and foresight to make accurate predictions as to what kind of a world the nation will face in 2025. This high level of opacity imposed by the uncertainty of the global security environment creates special challenges for the Army as it embarks on a sweeping transformation that aims to, first, produce new "medium-weight" units that can deploy anywhere in the world within 96 hours to fight previous-generation heavy forces and, second, create a "Future Force" that will revolutionize land warfare in the 2020 timeframe with groundbreaking new FCS platforms. Clearly, the Army confronts tough decisions on the speed, size, and scope of this transformation that will have to be informed by a planning methodology that assesses the evolving security environment in a dynamic fashion.

Although much of this study was done during the AAN period that immediately preceded the current Transformation initiative, the methodology presented herein for assessing the future is still relevant to the Army, since it is tied to general force capabilities and characteristics and not to specific programs or platforms. This research offers four areas of potential benefit to the Army: exposure to a spectrum of futures, a set of signposts for monitoring the international security environment, some insights on changes in the importance of

force structure size and intertheater mobility across the six worlds, and, finally, opportunities for hedging actions in force planning.

By providing a spectrum of six futures (U.S. Unipolarity, Democratic Peace, Major Competitor Rising, Competitive Multipolarity, Transnational Web, and Chaos/Anarchy) that were generated by mixing geopolitical, economic, demographic, technological, and environmental trends, this research provides a complement to the many DoD planning documents that focus on arriving at a single point solution that describes the future. Such a spectrum conveys a range of possibilities for the future, thus underlining the importance to Army leaders of not committing itself to a single vision of the 2025 force too early and of undertaking a robust program of testing and experimentation in the near term that does not foreclose force options for 2025 prematurely.

Second, this study gives Army intelligence analysts a set of signposts that can be used over the coming decade to determine which worlds are becoming more likely and which less likely. By 2010, these signposts may allow Army analysts to narrow down the list of prospective 2025 worlds substantially. Furthermore, the list of signposts provided here could also serve as a core upon which Army intelligence analysts and area experts could expand.

Third, this exercise showed that the importance of force structure size and rapid intertheater mobility does vary across different futures in interesting ways. In the area of force structure size, for example, it was determined that the medium-bad and worst-case worlds (Transnational Web and Chaos/Anarchy) require smaller force structures than do some of the better-case worlds. Threats posed by non-state actors, in other words, will require highly trained, specialized forces rather than large ones. As far as intertheater mobility is concerned, the analysis shows that one need not assume that it will be a top priority across the board in 2025. In our Peer Competitor world, for example, the long-term rise of a Sino-Russian Entente causes so much concern among our allies that the U.S. Army is granted the right to forward deploy very large forces in the affected theater over the long term.

Finally, this study points out some opportunities for hedging actions against uncertainty. In all of the worlds the Army was required to have secure, highly reliable wireless communications, robust and flexible logistics networks, and some form of theater missile or air defense. Thus, we can say with confidence that wise investments today in those three key areas will pay off well in the distant future regardless of developments in the international security environment.

The Army's current Transformation effort appears to meet the challenge of the uncertain future that has been laid out in this report. In the near term it seeks to build a more deployable, medium-weight component of the force that can deal effectively with fast-breaking contingencies in parts of the world where the U.S. Army has neither forward-deployed forces nor prepositioned equipment. However, the full-fledged Future Force of the 2020s is still in the experimentation phase, with many new platforms and technology concepts being considered. This two-tiered approach will serve the Army well as long as the temptation to make concrete hardware procurement decisions for the Future Force before 2010 is resisted. Recapitalizing too early could pose just as much of a danger to the Army's position in 2025 as recapitalizing too late. By watching intelligence and warning signposts carefully, taking care to build a core of capable young officers today who will be able to exercise strategic leadership of ground forces in the 2020s, encouraging open and honest debate in a variety of military science fora, and employing a mix of virtual, theoretical, and field wargames and exercises for experimentation, the Army should be able to use the coming decade to build a solid foundation upon which it can anticipate and effectively handle whichever future comes to pass in 2025.

In the event that the Army does indeed go ahead and begin deploying Future Force units in the 2010 timeframe, obviously it will not be possible to carefully study signposts for the year 2025 and tailor the Army modernization program during 2010–2025 accordingly. Thus, in order to ensure that the analysis contained in this report would still have relevance in that case, this final chapter concludes with a list of capabilities drawn from the six futures that should be incorporated into any "Full Spectrum 2010-Era Future Force." These

capabilities represent a collection of the defining elements of the six armies that have been developed herein and would allow the Army to meet a full portfolio of different threats in the 2025 timeframe, ranging from transnational terrorism to large conventional armies, as long as they were manageable in quantity and scope. One must remember, though, that these capabilities have indeed been optimized for the 2025 world, and putting them in place in the 2010 era would create some risk that they would not exactly fit the demands of the 2010–2025 security environment.

After sifting through the lists of critical capabilities for each world, the central thrust of each army type was determined and expressed in a succinct phrase. Below are the six macro-capabilities that represent a distillation of the critical capability lists for each army.

- Deploy capable light forces over long distances and defend lodgment (U.S. Unipolarity).
- Be able to clear and secure urban areas without high casualties (Democratic Peace).
- Fight high-intensity conventional wars with forward-deployed or prepositioned forces (Major Competitor Rising).
- Retain the capability to effectively maneuver advanced combat forces and associated sustainment on a global scale (Competitive Multipolarity).
- Influence global media, conduct strategic information warfare, and attack terrorist cells with capable SOF (Transnational Web).
- Operate combined arms force effectively in NBC-contaminated environment (Chaos/Anarchy).

This list would seem to argue that, in addition to the dedicated FCS family of ground combat vehicles, any 2010 Full Spectrum Future Force would be well served by the availability of advanced long-range sealift and airlift systems, new chemical and biological protection and decontamination equipment, advanced information warfare tools, and specialized MOUT equipment (e.g., nonlethal weaponry).

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To help the U.S. Army with force planning for the 2025 era, this study uses the tool of alternative futures analysis. It bounds the future the Army will face by laying out a representative spectrum of different "future worlds" that hopefully illustrate the complete universe of future missions. By mixing and matching possible trends across five key areas (geopolitics, economics, demographics, technology, and environment), six alternative futures are created: "U.S. unipolarity" and "democratic peace" (best cases), "major competitor rising" and "competitive multipolarity" (medium-good cases), "transnational web" (medium-bad case), and "chaos/anarchy" (worst case). After explaining the main features of each future, the study creates an appropriate "Army type" for each, through a three-step process: (1) a representative combat scenario was created for each future, (2) the strategies-to-tasks methodology was used to set out the raw capabilities needed for a given scenario, and (3) the force characteristics and size required to meet the needs presented in the capability statements were formulated. All the needed characteristics were then bundled together to form a basic Army type for a given future. The report concludes with a review and discussion of the common desired characteristics found across the six types.

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